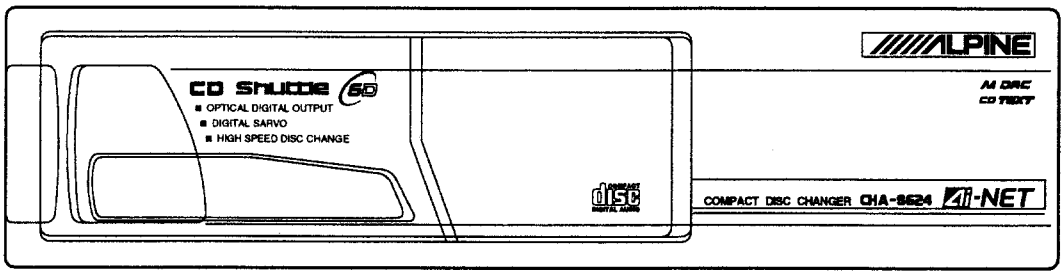
ALPINE®

SERVICE MANUAL

Compact Disc Remote Changer

CD Shuttle

COMPACT disc DIGITAL AUDIO



Ai-NET

CHA-S624

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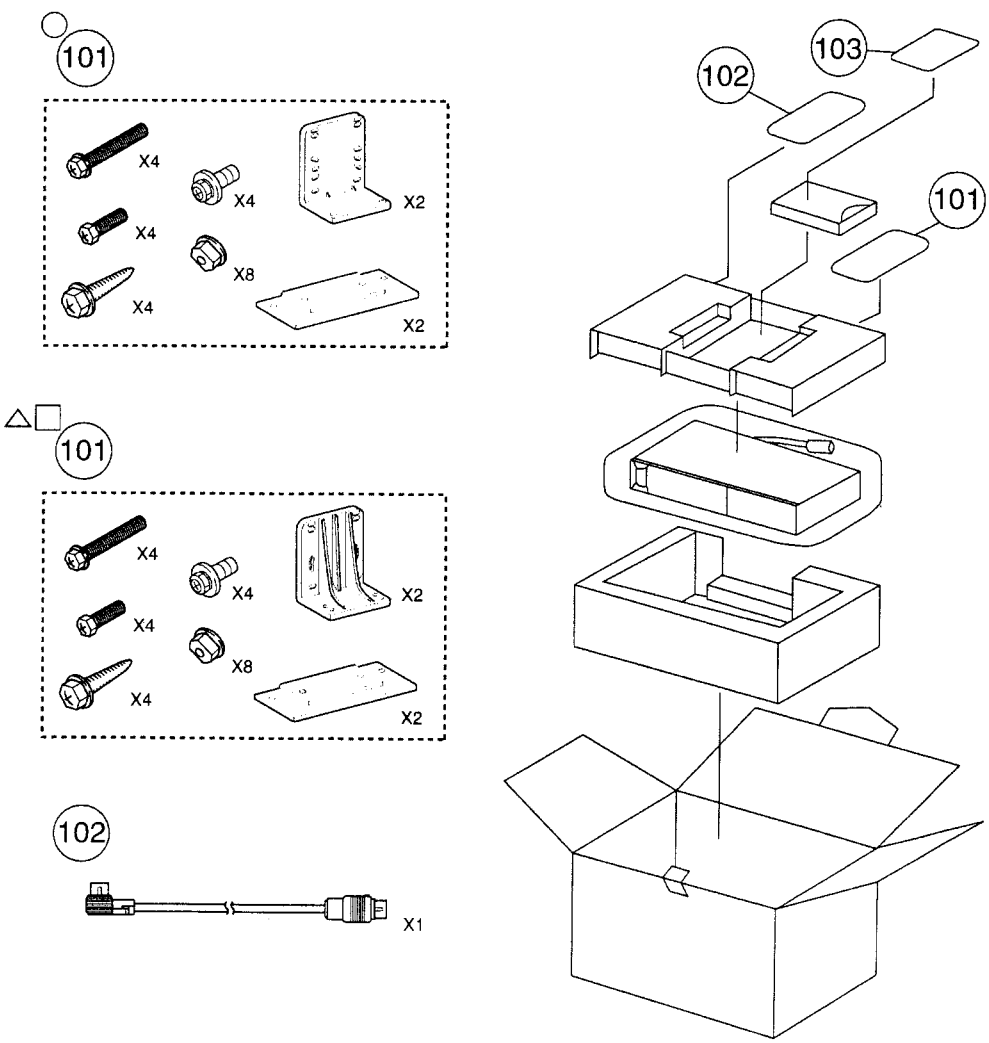
Packing Assembly Parts List

Symbol No.	Part No.	Description
○ 101	01C71646W02	Assy., Kit Installation
△ 101	01C71646W01	Assy., Kit Installation
□ 101	01C71646W01	Assy., Kit Installation
102	01T55561W34	Assy., Ai-NET Cable
○ 103	68P11646Y58	Owner's Manual
△ 103-1	68P11646Y58	Owner's Manual
△ 103-2	68P11646Y96	Owner's Manual (I/G/S)
□ 103	68P00967K30	Owner's Manual

Symbol No.	Part No.	Description

NOTE : ○: For North American Model Only, △: For General Foreign Model Only,
□ : For Japanese Model Only, Others : Common.

Packing Method View



Specifications

<CD SECTION>

System	Optical (Compact Disc System)
Quantizing Bit Number	16 Bit Linear System
Channels	2 Channels, Stereo
Distortion (997Hz)	0.02%
Frequency Response (Ref. 1kHz)	±2dB (17Hz~19.997kHz)
S/N Ratio	90dB
Channel Separation	75dB (997Hz)
	65dB (10.007kHz)
De-Emphasis (Ref. 1kHz)	-20±3dB (4kHz)
	-20±3dB (16kHz)
Currents Consumption (at PLAY)	1A

<GENERAL>

Power Supply	14V DC (10.5~16V allowable)
Output Voltage/Impedance	850±150mV/10kohm
Dimensions (W×H×D)	255×63×161.5mm
Weight	1.7kg

<COMPACT DISC>

Track Pitch	1.6 μm
Modulator Frequency	44.1kHz
Transfer Rate	4.3218 Mbit/sec.
Dimensions	120×1.2mm

Note : Due to Continuing product improvement, specifications and designs are subject to change without notice.

Servo Monitor (Part No. 01E20845S01)

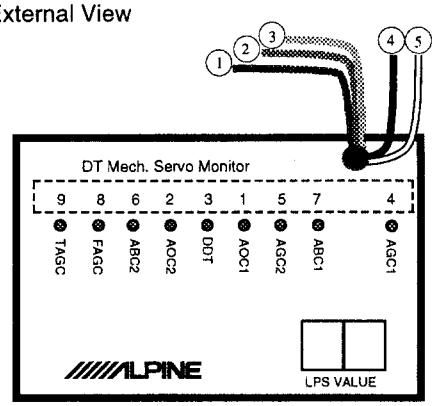
I. Purpose

CHA-S624 performs digital signal processing in the inside of Super 1 chip LSI and the outside alignment circuit builds in to this LSI and each alignments are automatic.

This DT Mechanism Servo Monitor is a jig for the automatic alignment circuitry. Please refer to the following list for the reference;

1. LED indicates the alignment.
2. Diagnosis of automatic alignment.
3. LED indicates a failure item for easy failure analysis of servo circuitry.

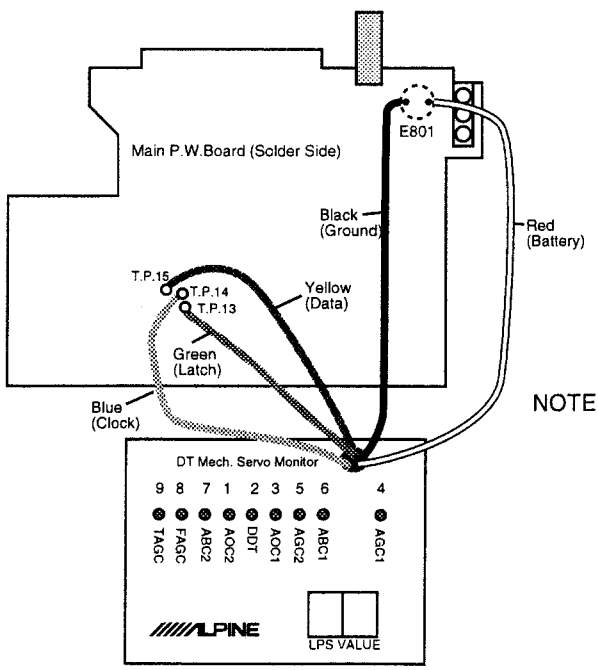
External View



	①	②	③	④	⑤
Wire Color	Yellow	Green	Blue	Black	Red
Name	Data	Latch	Clock	Ground	Battery

* The numbers of the automatic alignment sequence.

II. Connection Points and Connection Method



NOTE : For the Test Points (T.P.13~15), refer to the Parts Layout on P.W.Boards and Wiring Diagram.

Connect each of the wires to the Test point as illustrated in the diagram.

* Be very careful not to shorts the test points since they are located close together.

III. Operating Specifications

The automatic adjustment operations of the CHA-S624 are performed by output of the commands of the various adjustment items from the main microprocessor. Adjustments are performed in response to these commands by the super 1-chip LSI. This servo monitor jig receives the signal returned to the main microprocessor from the super 1 chip LSI and causes the LED to light or go off. The adjustment condition (of either completed or not yet completed) of the various adjustment items can be checked using the lighting condition of this LED. The following test discs are required for the good/fault judgment:

1. A-BEX TCD-721 (6th track - 1.2mm) : Scratch test disc
2. A-BEX TCD-782 : Signal test disc

Measures to be Taken Corresponding to the LED Indication

1. When a LED other than FAGC or TAGC lights, perform the fault causation analysis using the fault diagnosis chart according to the LED indication.
2. When only the FAGC or TAGC LED turn on a lights (indicating that the focus/tracking fine gain adjustment is not completed), perform the focus/tracking servo gain adjustment. If the value is within the specification, the adjustment is normal.

i) LED indications

Lit : Fault Unlit : OK

Adjustment Order	LED Name	Adjustment Order	Contents
1	AOC1	Focus offset adjustment	Corrects the focus error value as an offset.
2	AOC2	Tracking offset adjustment	Corrects the tracking error value as an offset.
3	DDT	Disc detection	Detects the presence or absence of a disc.
4	AGC1	Focus rough gain adjustment	Determines the amount of external interference applied at the time of the focus rough gain adjustment.
5	AGC2	Tracking rough gain adjustment	Determines the amount of external interference applied at the time of the racking rough gain adjustment.
6	ABC2	Tracking balance adjustment	Corrects the average value of the tracking error as a balance value.
7	ABC1	Focus balance adjustment	Provides correction so that the focus error signal can take balance between positive sections and negative sections.
8	FAGC	Focus fine gain adjustment	Introduces external interference and adjusts the focus gain to an appropriate value.
9	TAGC	Tracking fine gain adjustment	Introduces external interference and adjusts the tracking gain to an appropriate value.

ii) Seven-Segment LED (LPS Value)

This mechanism has 13 position of 1T to 6T, 1P to 6P, E.
Those positions indicate height of elevator of mechanism in 7 segment LED in hexadecimal.
IC501 reads data from these positions and convert into A/D signal. Hexadecimal and tray location refer to the following list.

* The 1st to 6th disc traies step each 1T to 6T draw out of magazine.
The 1st to 6th discs step each 1P to 6P to disc chuck and play.
E is the position that magazine ejects.

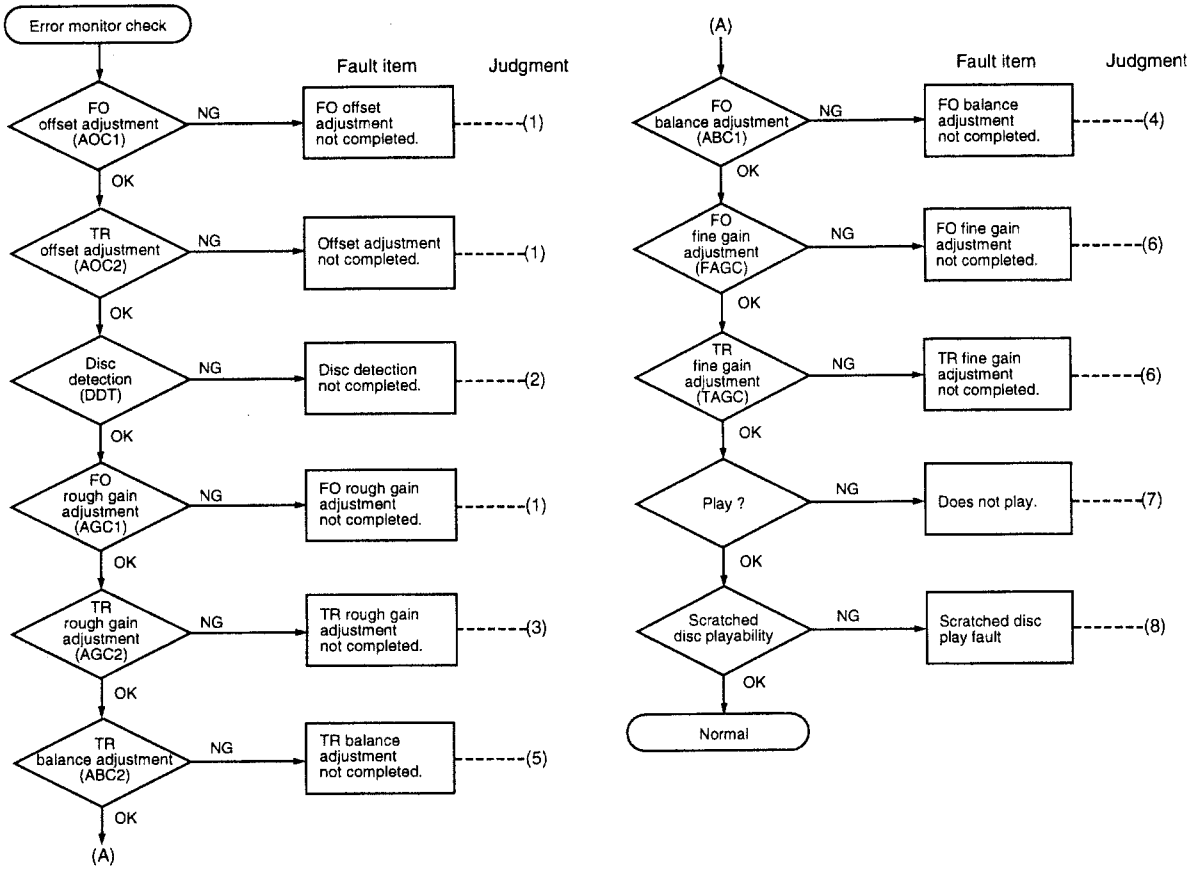
Position	Ratio of Resistance Value (%)	Hex Code
6P	91.00	F2-F6
5P	78.76	D3-D7
6T	76.17	C1-C5
4P	66.52	63-67
5T	63.94	A2-A6
3P	54.29	93-97
4T	51.70	82-86
2P	42.05	74-78
3T	39.46	63-67
1P	29.81	55-59
2T	27.22	44-48
1T	15.95	27-31
E	5.00	0B-0F

NOTE 1 : Display of each position is value of limit of HEX code, liner position sensor is normal.

NOTE 2 : In case of LPS is normal and disc change actuating is not smooth, check magazine circumference tray chassis again.

IV. Fault Diagnosis Chart

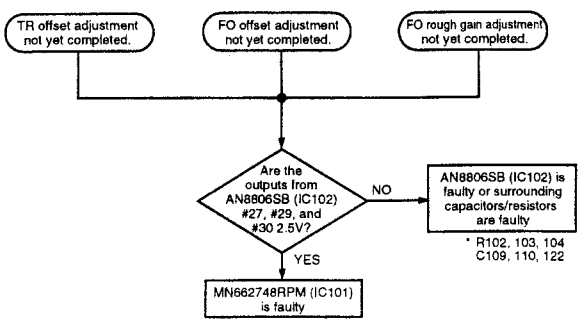
Main Flow Chart



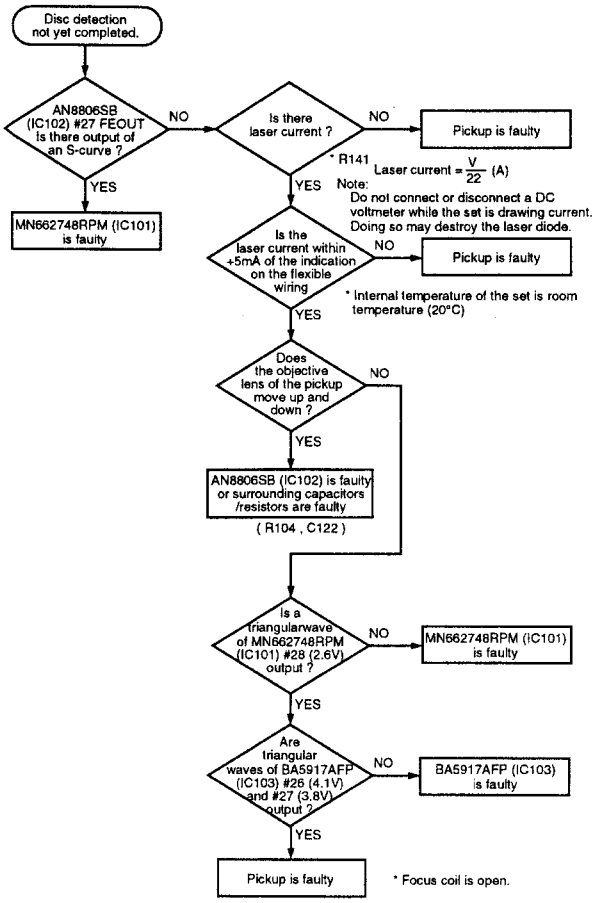
* Notes

1) When more than one LED are light, perform a circuit check according to the order of the main flow chart.
2) Proper soldering of patterns and IC pins is a precondition. Accordingly, when an IC fault is reached in the flow chart, do not replace the part immediately; check the soldering (for loose and bridges).
3) Faults such as faulty capacitors and resistors in the flow include bad parts, different constants, looseness, and cracks.
4) Use track 6 of A-BEX TCD-721 for the scratched disc playability check.

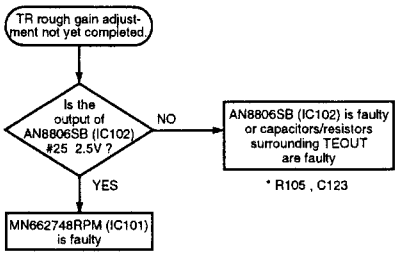
Judgments (1)


TR offset adjustment not yet completed.
FO offset adjustment not yet completed.
FO rough gain adjustment not yet completed.
Are the outputs from AN8806SB (IC102) #27, #29, and #30 2.5V?
NO
AN8806SB (IC102) is faulty or surrounding capacitors/resistors are faulty
* R102, 103, 104 C109, 110, 122
YES
MN662748RPM (IC101) is faulty

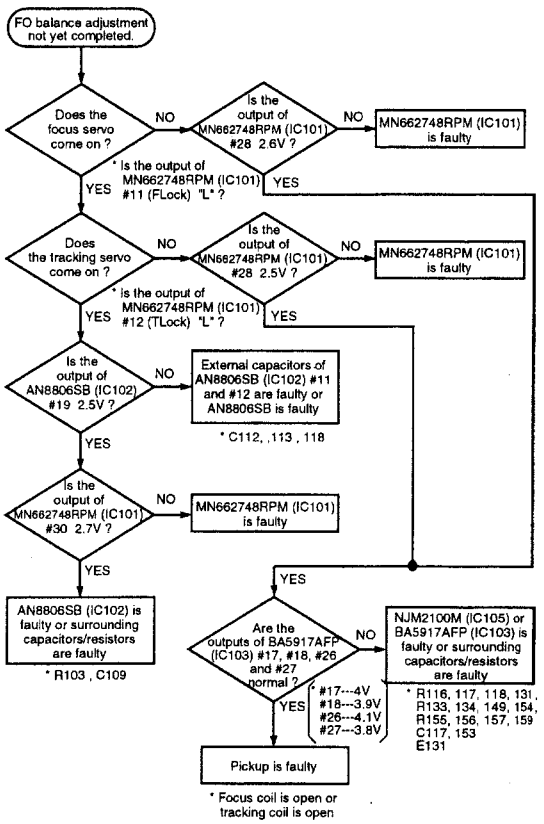
Judgments (2)


Disc detection not yet completed.
AN8806SB (IC102) #27 FEOUT Is there output of an S-curve ?
NO
YES
MN662748RPM (IC101) is faulty
Is there laser current ?
NO
Pickup is faulty
* R141
Laser current = V/22 (A)
YES
Note: Do not connect or disconnect a DC voltmeter while the set is drawing current. Doing so may destroy the laser diode.
Is the laser current within +5mA of the indication on the flexible wiring
NO
Pickup is faulty
* Internal temperature of the set is room temperature (20°C)
YES
Does the objective lens of the pickup move up and down ?
NO
YES
AN8806SB (IC102) is faulty or surrounding capacitors /resistors are faulty
(R104 , C122)
Is a triangularwave of MN662748RPM (IC101) #28 (2.6V) output ?
NO
MN662748RPM (IC101) is faulty
YES
Are triangular waves of BA5917AFP (IC103) #26 (4.1V) and #27 (3.8V) output ?
NO
BA5917AFP (IC103) is faulty
YES
Pickup is faulty
* Focus coil is open.

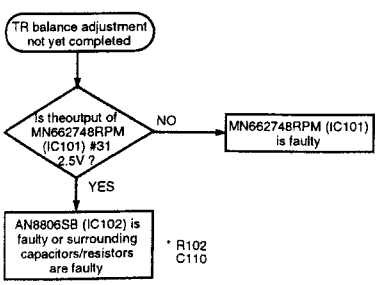
Judgments (3)


TR rough gain adjustment not yet completed.
Is the output of AN8806SB (IC102) #25 2.5V ?
NO
AN8806SB (IC102) is faulty or capacitors/resistors surrounding TEOUT are faulty
* R105 , C123
YES
MN662748RPM (IC101) is faulty

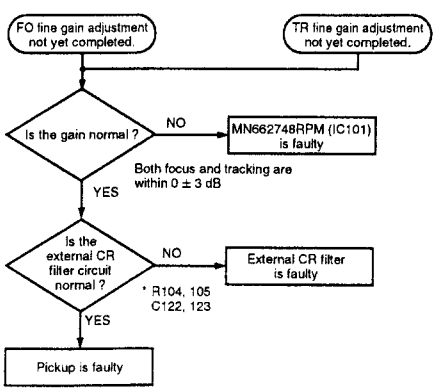
Judgments (4)


FO balance adjustment not yet completed.
Does the focus servo come on ?
NO
Is the output of MN662748RPM (IC101) #28 2.6V ?
NO
MN662748RPM (IC101) is faulty
* Is the output of MN662748RPM (IC101) #11 (FLock) "L" ?
YES
YES
Does the tracking servo come on ?
NO
Is the output of MN662748RPM (IC101) #28 2.5V ?
NO
MN662748RPM (IC101) is faulty
* Is the output of MN662748RPM (IC101) #12 (TLock) "L" ?
YES
YES
Is the output of AN8806SB (IC102) #19 2.5V ?
NO
External capacitors of AN8806SB (IC102) #11 and #12 are faulty or AN8806SB is faulty
* C112, ,113 , 118
YES
Is the output of MN662748RPM (IC101) #30 2.7V ?
NO
MN662748RPM (IC101) is faulty
YES
YES
AN8806SB (IC102) is faulty or surrounding capacitors/resistors are faulty
* R103 , C109
Are the outputs of BA5917AFP (IC103) #17, #18, #26 and #27 normal ?
NO
NJM2100M (IC105) or BA5917AFP (IC103) is faulty or surrounding capacitors/resistors are faulty
* R116, 117, 118, 131, R133, 134, 149, 154, R155, 156, 157, 159 C117, 153 E131
* #17---4V #18---3.9V #26---4.1V #27---3.8V
YES
Pickup is faulty
* Focus coil is open or tracking coil is open

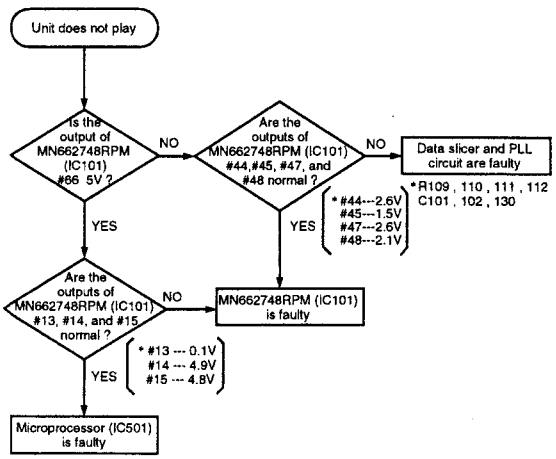
Judgments (5)


TR balance adjustment not yet completed
Is theoutput of MN662748RPM (IC101) #31 2.5V ?
NO
MN662748RPM (IC101) is faulty
YES
AN8806SB (IC102) is faulty or surrounding capacitors/resistors are faulty
* R102 C110

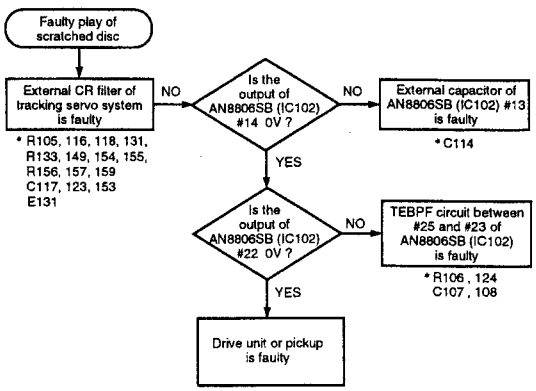
Judgments (6)


FO fine gain adjustment not yet completed.
TR fine gain adjustment not yet completed.
Is the gain normal ?
NO
MN662748RPM (IC101) is faulty
Both focus and tracking are within 0 ± 3 dB
YES
Is the external CR filter circuit normal ?
NO
External CR filter is faulty
* R104, 105 C122, 123
YES
Pickup is faulty

Judgments (7)



Judgments (8)

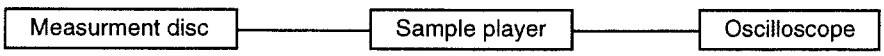

Faulty play of scratched disc
External CR filter of tracking servo system is faulty
NO
Is the output of AN8806SB (IC102) #14 0V ?
NO
External capacitor of AN8806SB (IC102) #13 is faulty
* C114
* R105, 116, 118, 131, R133, 149, 154, 155, R156, 157, 159 C117, 123, 153 E131
YES
Is the output of AN8806SB (IC102) #22 0V ?
NO
TEBPF circuit between #25 and #23 of AN8806SB (IC102) is faulty
* R106 , 124
C107 , 108
YES
Drive unit or pickup is faulty

Measurements

A. RF Signal Level Measurement

The main beam of the returning light is received by the photodiode and the output voltage is obtained by current-voltage conversion of A+B+C+D.

1. Block Diagram



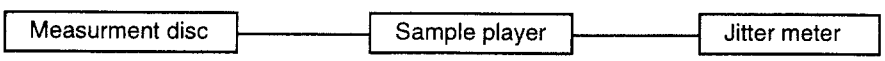
2. Measurement Method

(a). Connect the ground terminal of the oscilloscope VREF (AN8806SB (IC102), PIN 20) and measure the RF signal (of AN8806SB (IC102), pin 7).
(b). Play the first track of the measurement disc A-BEX TCD-782.
(c). Read the peak-to-peak value of the waveform.
Specification: 0.5V ±0.2
* When the value is outside of the specification (i.e., not good), check AN8806SB (IC102), the pickup, and R101.

B. Jitter Measurement

The standard deviation of the pulse width when a trigger is applied to the rising edge of the 3T component of the RF signal.

1. Block Diagram



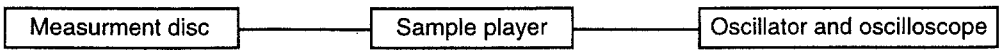
2. Measurement Method

(a). Connect the ground terminal of the jitter meter to VREF (AN8806SB (IC102), PIN 20) and measure the ARF signal (of AN8806SB (IC102), pin 10).
(b). Play the first track of the A-BEX TCD-782 measurement disc.
(c). Read the indicated value of the jitter meter.
Specification: 25nS or less
* When the value is outside of the specification, check AN8806SB (IC102), the pickup, and R101.

C. Focus Servo Gain Measurement

Measure the focus servo open loop gain in the servo-on (closed loop) condition.

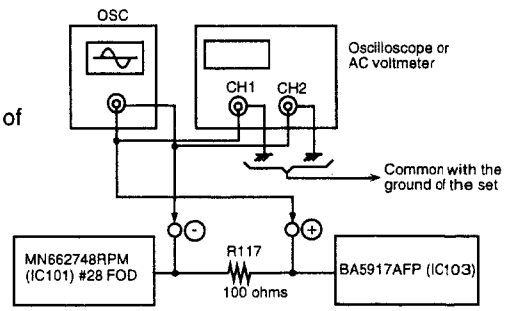
1. Block Diagram



2. Measurement Method using an Oscillator and an Oscilloscope

(a). Connect OSC output to resistor for gain measurement (100 ohms).
(Connect a servo driver side to positive side.)
(b). Connect CH1 of oscilloscope to a servo driver side of resistor for gain measurement (100 ohms).
(Connect negative side with GND of set.)
(c). Connect CH2 of oscilloscope to MN662748RPM (IC101) side of resistor for gain measurement (100 ohms).
(Connect negative side with GND of set.)
(d). Play back the eighth track of A-BEX TCD-782 disc for measurement. (No sound recording track)
(e). Output frequency (1.2 kHz, 50 mVP-P) from OSC and compare the amplitude of CH1 and CH2 of oscilloscope and convert into dB.
NOTE: AC voltmeter is available to measurement.

3. Connection (Example)

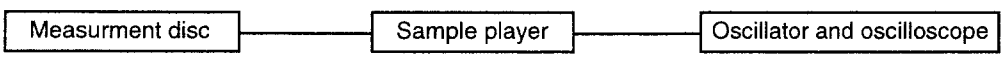


* FOD: Focus drive output

D. Tracking Servo Gain Measurement

Measure the tracking servo open loop gain in the servo-on (closed loop) condition.

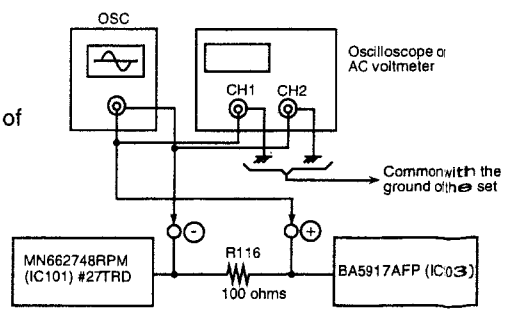
1. Block Diagram



2. Measurement Method using an Oscilloscope

(a). Connect OSC output to resistor for gain measurement (100 ohms).
(Connect a servo driver side to positive side.)
(b). Connect CH1 of oscilloscope to a servo driver side of resistor for gain measurement (100 ohms).
(Connect negative side with GND of set.)
(c). Connect CH2 of oscilloscope to MN662748RPM (IC101) side of resistor for gain measurement (100 ohms).
(Connect negative side with GND of set.)
(d). Play back the eighth track of A-BEX TCD-782 disc for measurement. (No sound recording track)
(e). Output frequency (1.2 kHz, 50 mVP-P) from OSC and compare the amplitude of CH1 and CH2 of oscilloscope and convert into dB.
NOTE: AC voltmeter is available to measurement.

3. Connection (Example)



* TRD: Tracking drive output

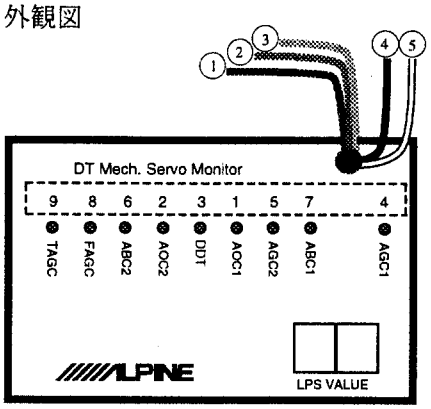
サーボモニターについて (Part No. 01E20845S01)

I. 目的

CHA-S624では、デジタル信号処理をSuper 1 chip LSI内で処理しています。
従来の外部調整回路もこのLSI内に内蔵されており、各種調整が自動で行なわれています。
このDT Mechanism Servo Monitorは、これらの自動調整が正常動作しているかを判定する治具で、以下の確認を行ないます。

1. 調整が正確に行なわれたかを表示します。
2. 自動調整の良否判定を行ないます。
3. 不具合項目をLED表示し、サーボ回路の不良解析を容易にします。

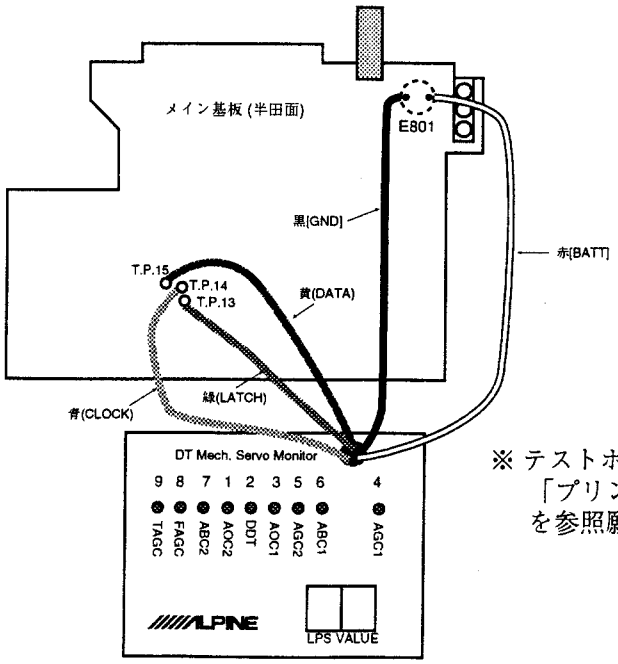
外観図



	①	②	③	④	⑤
ﾜｲﾔｰｶﾗｰ	黄色	緑色	青色	黒色	赤色
名 称	DATA	LATCH	CLOCK	GND	BATT

＊破線内の数字は、自動調整順位を意味します。

II.接続ポイントと接続方法



※ テストポイント (T.P.13～15) については、「プリント基板部品配置図及び総合線図」を参照願います。

各ワイヤーを図のポイントへ接続する。
＊テストポイントが近接しているのでショートしないよう十分に注意して下さい。

III. 動作仕様

CHA-S624の自動調整動作は、メインマイコンから各調整項目のコマンドを出しSuper 1 Chip LSIでは、そのコマンドに応じて調整を行います。このサーボモニター治具は、Super 1 Chip LSIからメインマイコンに返ってきた信号を受け、LEDを点灯もしくは消灯させます。　このLEDの点灯状態により、各調整項目の調整状態(完了/未完了)を確認することが出来ます。
良否判定には、次のテストディスクが必要です。

1. A-BEX TCD-721 (6曲目-1.2mm) ： スクラッチテストディスク
2. A-BEX TCD-782 ： 信号テストディスク

LED表示に対する処置方法

1. FAGC, TAGC以外のLEDが点灯した場合は、LED表示に従って不良診断チャートにより不良原因解析を行なって下さい。
2. FAGC, TAGCのLEDのみ点灯した場合(フォーカス/トラッキング精AGCが未完了)は、フォーカス/トラッキングサーボゲイン測定を行なってスペック内であれば正常です。

i) 各LEDについて

消灯：OK　　点灯：NG

調整順位	LED名称	調整項目	内容
1	AOC1	フォーカス オフセット調整	フォーカスエラー値をオフセットとして補正する。
2	AOC2	トラッキング オフセット調整	トラッキングエラー値をオフセットとして補正する。
3	DDT	ディスク検出	ディスクの有無を検知する。
4	AGC1	フォーカス 粗ゲイン調整	フォーカス精ゲイン調整時の外乱注入量を決定する。
5	AGC2	トラッキング 粗ゲイン調整	トラッキング精ゲイン調整時の外乱注入量を決定する。
6	ABC2	トラッキング バランス調整	トラッキングエラーの平均値をバランス値として補正する。
7	ABC1	フォーカス バランス調整	フォーカスエラー信号が正区間と負区間でバランスがとれる様に補正する。
8	FAGC	フォーカス 精ゲイン調整	外乱を注入しフォーカスゲインを適正値に調整する。
9	TAGC	トラッキング 精ゲイン調整	外乱を注入しトラッキングゲインを適正値に調整する。

ii) 7セグメントLEDについて(LPS VALUE)

本メカは、1T～6T, 1P～6P, Eの13ポジションを持っています。そこで7セグメントLEDによりメカのエレベータ高さを16進(文字コード)表示致します。　LPS (リニアポジションセンサー) により得られたデータをIC501のマイコンが読み取り、A/D変換する。　この値により1枚目～6枚目のディスク引き込み位置及びプレイ位置そしてイジェクト位置を知ることが出来ます。下表は16進の値とトレイ位置の対応表です。

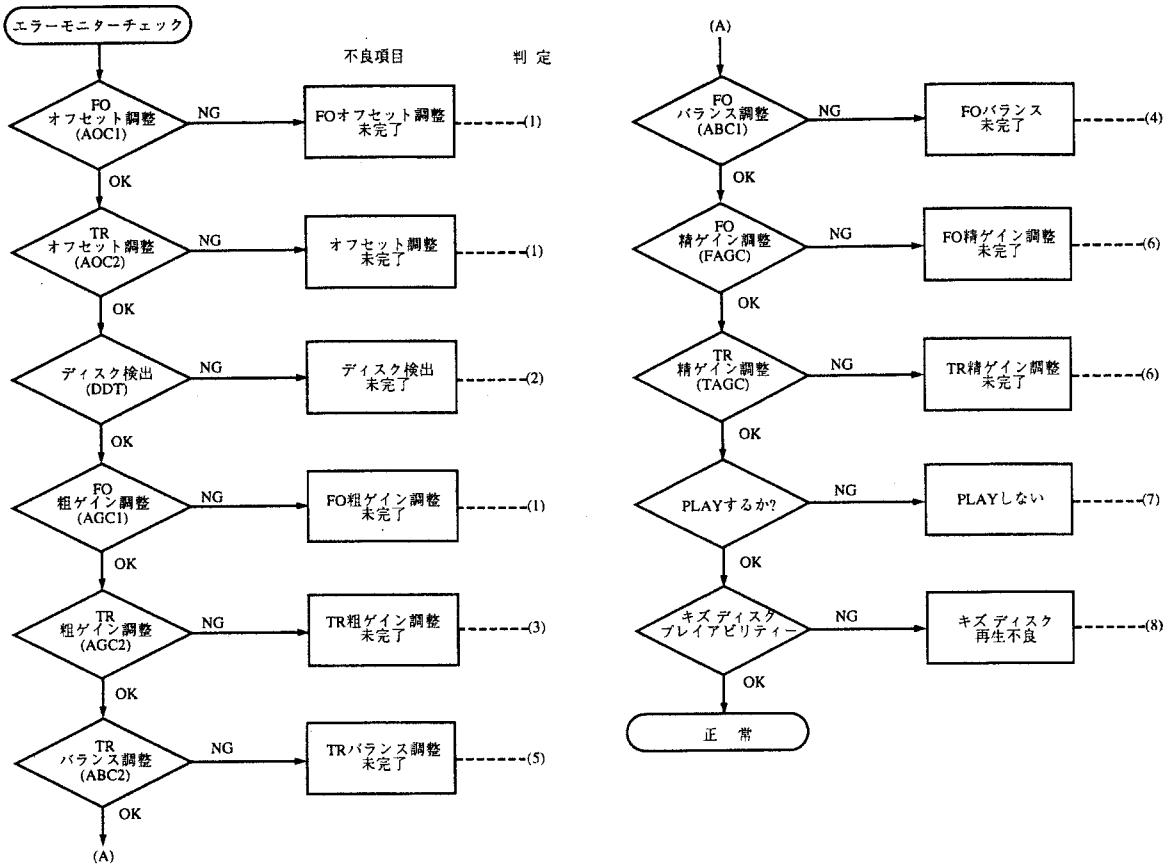
* 1T～6Tは、それぞれ1番～6番のディスクトレイをマガジンから引き出すポジション
1P～6Pは、それぞれ1番～6番のディスクをチャッキングし、PLAYするポジション
Eは、マガジンをEJECTするポジションです。

ポジション			抵抗値の比 (%)	HEXコード
6P			91.00	F2 - F6
5P			78.76	D3 - D7
	6T		76.17	C1 - C5
4P			66.52	B3 - B7
	5T		63.94	A2 - A6
3P			54.29	93 - 97
	4T		51.70	82 - 86
2P			42.05	74 - 78
	3T		39.46	63 - 67
1P			29.81	55 - 59
	2T		27.22	44 - 48
	1T		15.95	27 - 31
		E	5.00	0B - 0F

注1)　各ポジションに於ける表示がHEXコードの範囲内の値であれば、リニアポジション センサー(LPS)は正常です。
注2)　LPS (リニアポジションセンサー) が正常にかかわらずディスクチェンジ動作がスムーズに行なわれない時は、マガジン / トレイシャーシ周りの確認を行なって下さい。

IV. 不良診断チャート

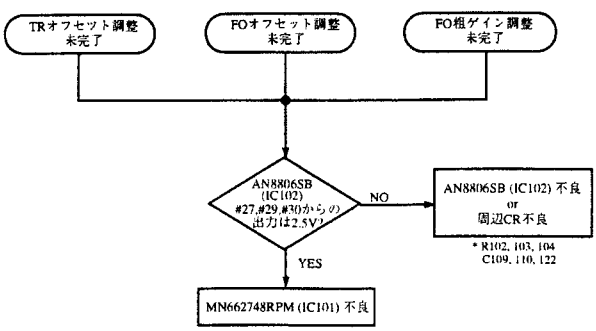
メインフローチャート



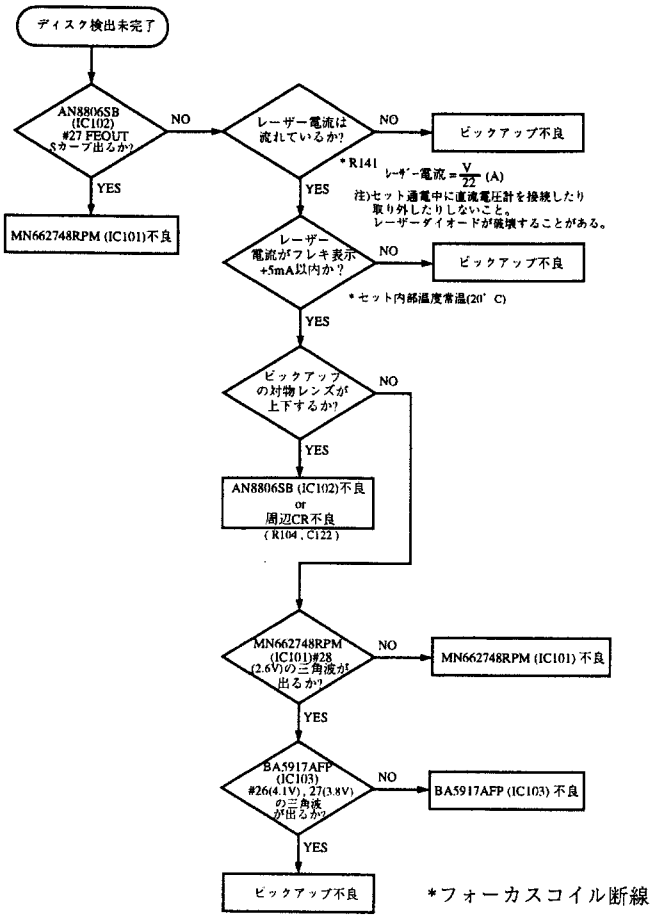
* 注記

1) 複数のLEDが点灯した場合は、メインフローの順番に従って回路チェックを行なって下さい。
2) パターンやIC端子の半田付けは正常であることが前提です。従って、フローチャートにてIC不良にたどりついた時は、直ぐに交換せず半田付け (ルーズ、ブリッジ)の確認を行なって下さい。
3) フロー中のC,R不良等の"不良"とは"欠品""定数違い""ルーズ""クラック"も含まれています。
4) キズディスクプレイアビリティーは、A-BEX TCD-721(6曲目)を使用して下さい。

判定 (1)

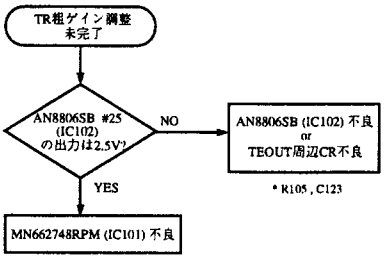


判定 (2)

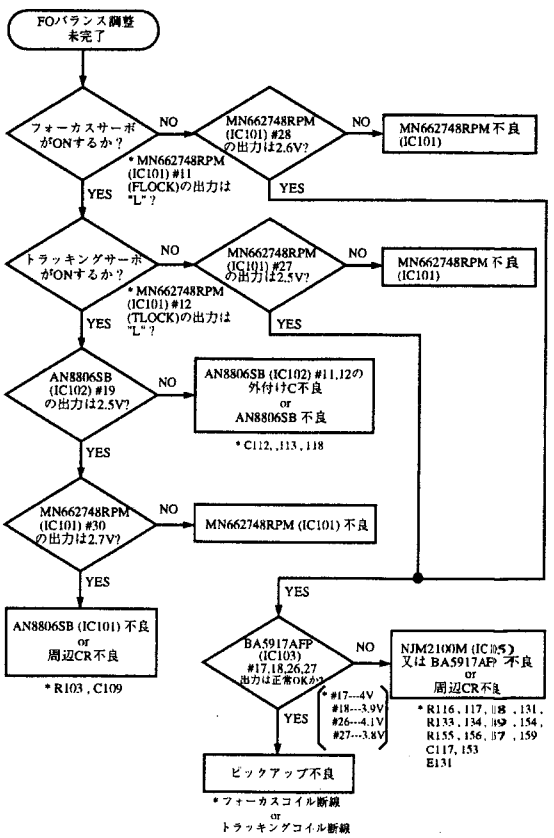


*フォーカスコイル断線

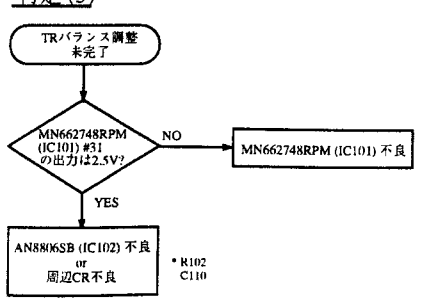
判定 (3)



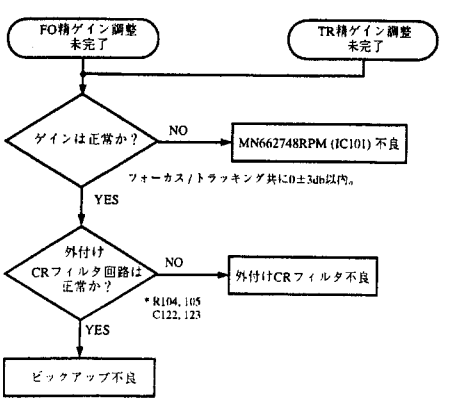
判定 (4)



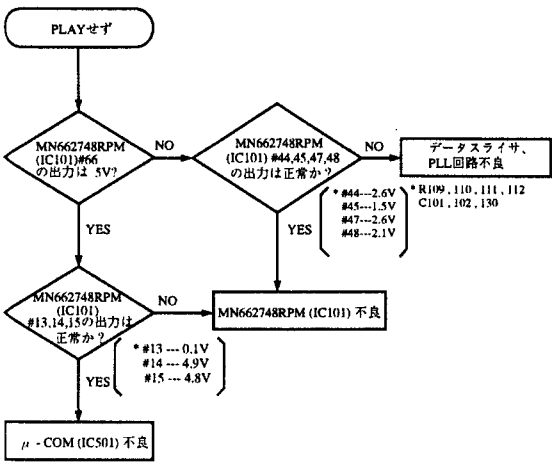
判定 (5)



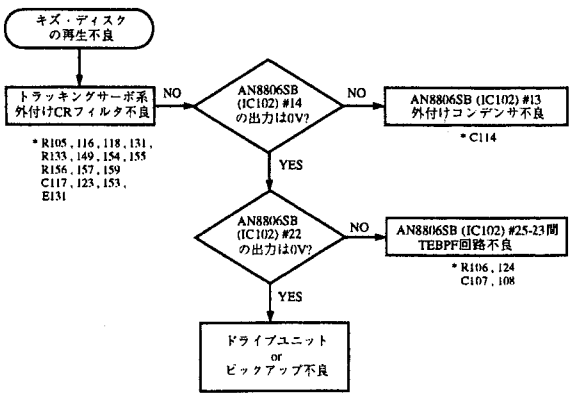
判定 (6)



判定 (7)



判定 (8)

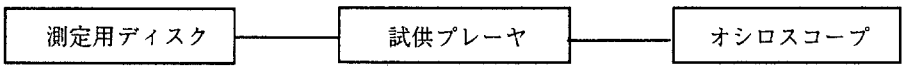


測定要領

A. RF信号レベル測定

戻り光のメインビームをフォトダイオードで受光し、A+B+C+Dの電流 - 電圧変換した出力電圧。

(1) ブロック図



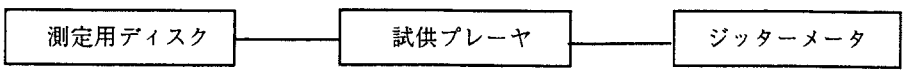
(2) 測定法

(a) オシロスコープのGND端子をVREF(AN8806SB (IC102), 20番ピン)に接続し、RF信号(AN8806SB (IC102), 7番ピン)を測定する。
(b) 測定用ディスク A-BEX TCD-782の1曲目を再生する。
(c) 波形のP - P値を読み取る。
スペック： 0.5V ± 0.2
* スペックアウト(NG)の場合は、AN8806SB (IC102)/ ピックアップ / R101を確認して下さい。

B. ジッター測定

RF信号の3T成分の立ち上がりエッジにトリガーをかけた時のパルス幅の標準偏差。

(1) ブロック図



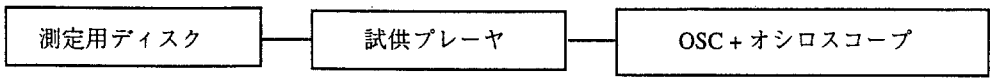
(2) 測定方法

(a) ジッターメータのGND端子をVREF(AN8806SB (IC102), 20番ピン)に接続し、ARF信号(AN8806SB (IC102), 10番ピン)を測定する。
(b) 測定用ディスクA-BEX TCD-782の1曲目を再生する。
(c) ジッターメーターの指示値を読み取る。
スペック：25nS以下。
*スペックアウト(NG)の場合は、AN8806SB (IC102)/ ピックアップ / R101を確認して下さい。

C. フォーカス・サーボ・ゲイン測定

フォーカス・サーボ・オープンループゲインをサーボON
(クローズドループ)状態で測定する。

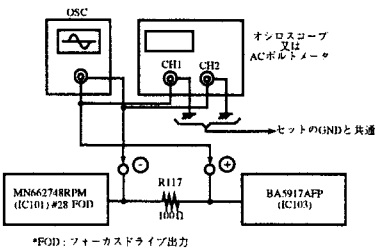
(1) ブロック図



(2) 測定法 --- OSCとオシロスコープを用いる方法。

(a) ゲイン測定抵抗(100Ω)の両端にOSCを接続する。
(サーボドライバー側がホット)
(b) オシロスコープのCH1(ホット側)をゲイン測定抵抗(100Ω)のサーボドライバー側に接続する。(コールド側はセットのGNDに接続)
(c) オシロスコープのCH2(ホット側)をゲイン測定抵抗(100Ω)のMN662748RPM側(IC101)に接続する。(コールド側はセットのGNDに接続)
(d) 測定用ディスクA-BEX TCD-782の8曲目 (無音部)を再生する。
(e) OSCから1.2KHz 50mVP-P の信号を出力し、オシロスコープのCH1とCH2信号の振幅を比較し、デシベルに換算する。
Gain (db) = 20 Log (CH2 / CH1)
スペック：ゲイン 0±3db以内であれば正常。
*スペックアウト(NG)の場合はMN662748RPM (IC101)(ｽｰﾊﾟｰ1ﾁｯﾌﾟLSI)不良
注) オシロスコープの代わりに、ACボルトメーターを用いてもよい。

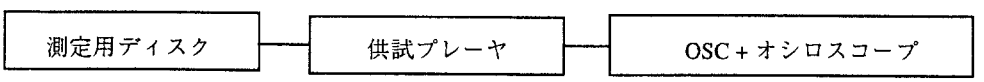
(3) 接続例



D. トラッキング・サーボ・ゲイン測定

トラッキング・サーボ・オープンループゲインをサーボON
(クローズドループ)状態で測定する。

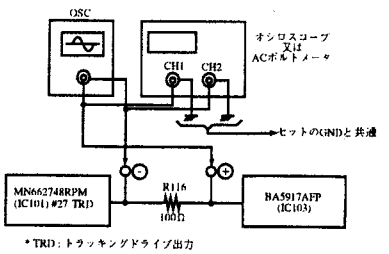
(1) ブロック図



(2) 測定法 --- オシロスコープを用いる方法。

(a) ゲイン測定抵抗(100Ω)の両端にOSCを接続する。
(サーボドライバー側がホット)
(b) オシロスコープのCH1(ホット側)をゲイン測定抵抗(100Ω)のサーボドライバー側に接続する。(コールド側はセットのGNDに接続)
(c) オシロスコープのCH2(ホット側)をゲイン測定抵抗(100Ω)のMN662748RPM (IC101)側に接続する。(コールド側はセットのGNDに接続)
(d) 測定用ディスクA-BEX TCD-782の8曲目 (無音部)を再生する。
(e) OSCから1.2KHz 50mVP-P の信号を出力し、オシロスコープのCH1とCH2信号の振幅を比較し、デシベルに換算する。
Gain (db) = 20Log (CH2 / CH1)
スペック：ゲイン 0±3db以内であれば正常。
* スペックアウト(NG)の場合は、MN662748RPM (IC101) (ｽｰﾊﾟｰ1ﾁｯﾌﾟLSI)不良
注) オシロスコープの代わりに、ACボルトメーターを用いてもよい。

(3) 接続例



Resetting the mechanism elevator position

After conducting the works below, be sure to reset the mechanism elevator position with the procedure.

1. When P. W. Board is removed from the mechanism and connected again.
2. When IC502 is replaced.

＜Procedures of resetting the mechanism elevator position＞

1. Turn off the power of the CD changer. (If not, the CD changer may be damaged.)
2. Remove the solder short-circuited to TP2 and short-circuit TP1.
3. Check that the short-circuiting is applied for TP1 only and turn the power on.
4. Check the mechanism position setting operation (the elevator is moving up and down, and stops at the top again) is carried out and turn the power off again.
5. Remove the solder short-circuited to TP1 and short-circuit TP2 again.
6. Turn the power on again and check the operation.

メカエレベーター位置の再設定について

下記の作業を行った場合には、必ずメカエレベーター位置の再設定を手順に従い行って下さい。

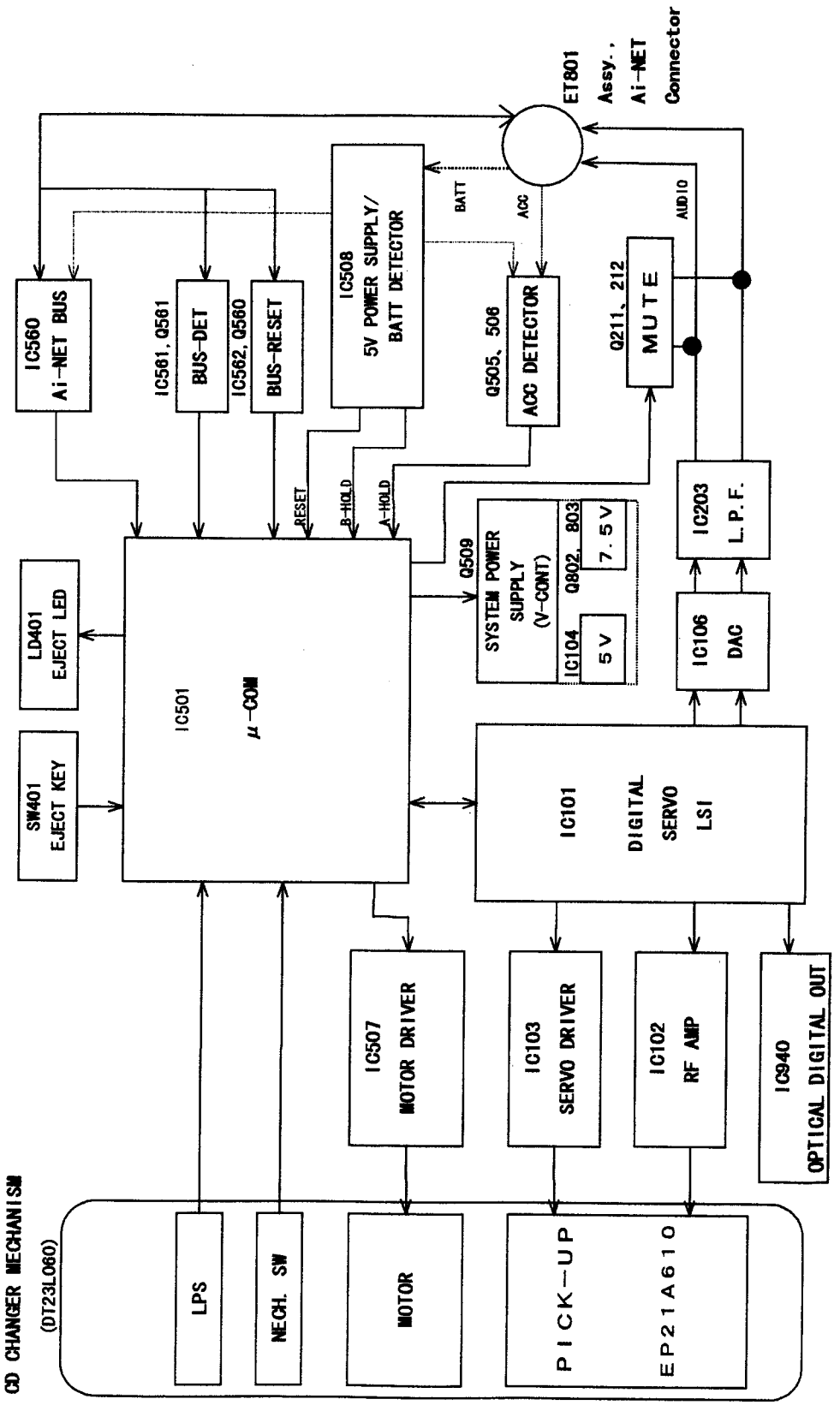
1. メカから基板を外し再接続した時。
2. IC502を交換した時。

＜メカエレベーター位置の再設定作業手順＞

1. CDチェンジャーの電源を落とす。

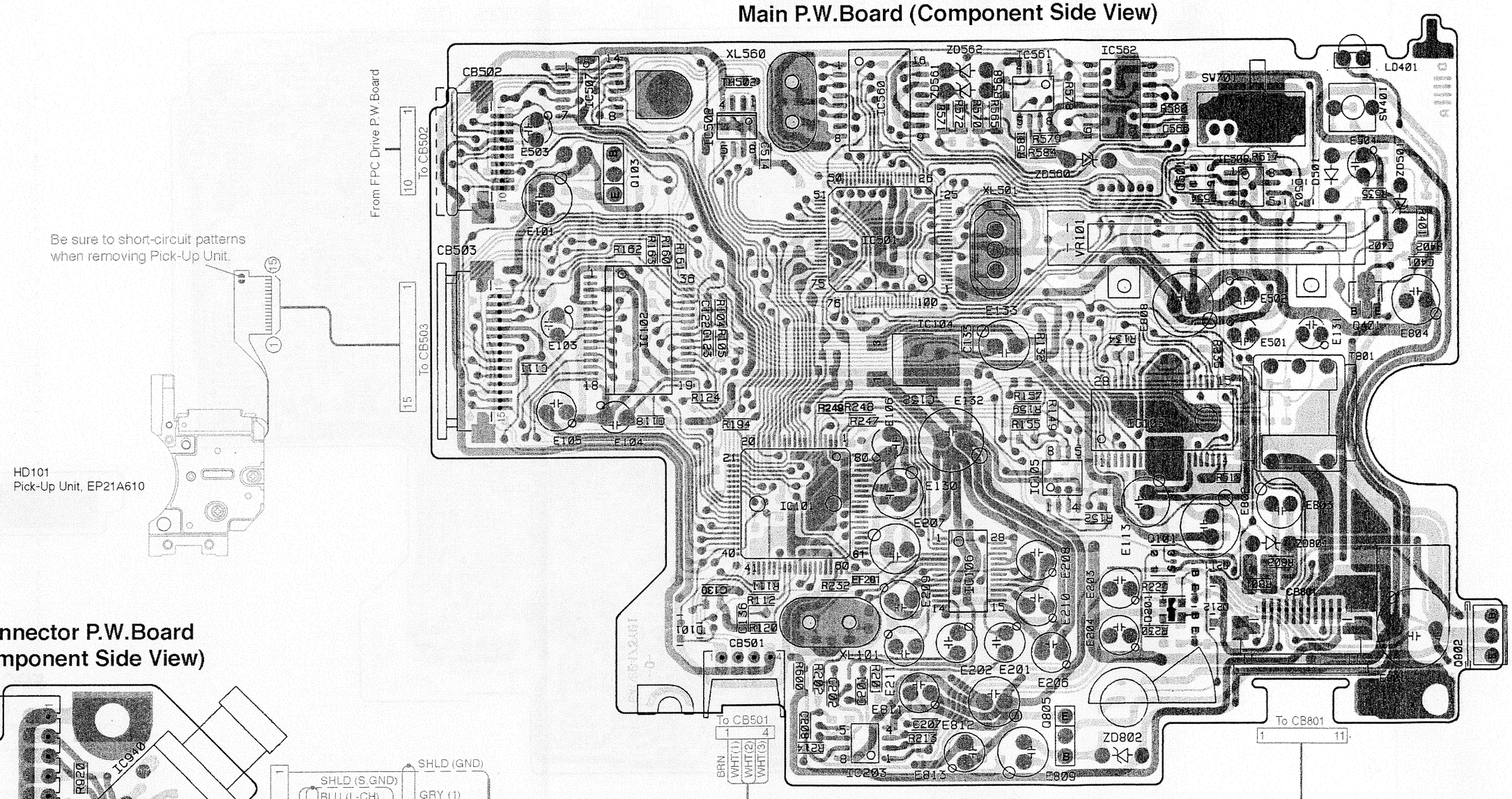
   (電源を入れたままの作業は、CDチェンジャーを破壊する恐れがあります。)
2. TP2にショートしてある半田を取り除き、TP1をショートする。
3. TP1のみにショートしてあること確認し、電源を入れる。
4. メカの位置設定動作 (エレベーターが上下に動き、再度上部で止まる。) を確認し、再度電源を落とす。
5. TP1にショートしてある半田を取り除き、TP2をショートする。
6. 再度電源を入れて動作を確認する。

Block Diagram

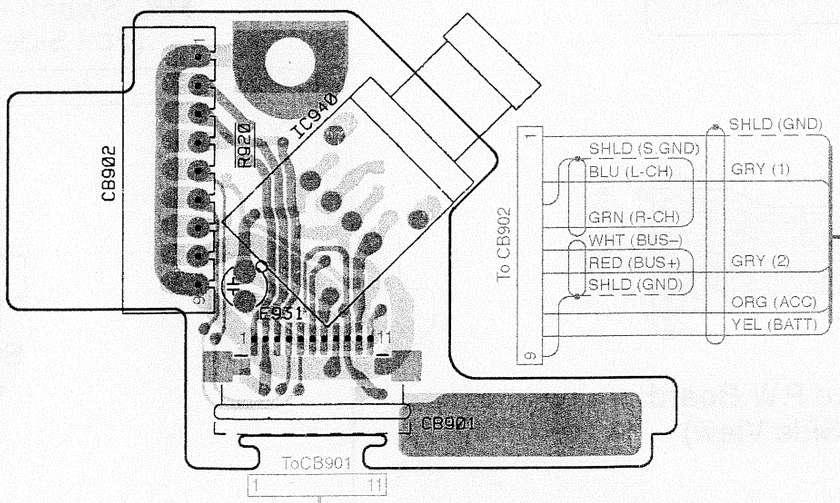


Parts Layout on P.W. Boards and Wiring Diagram (1/2)

Main P.W.Board (Component Side View)



Connector P.W.Board (Component Side View)

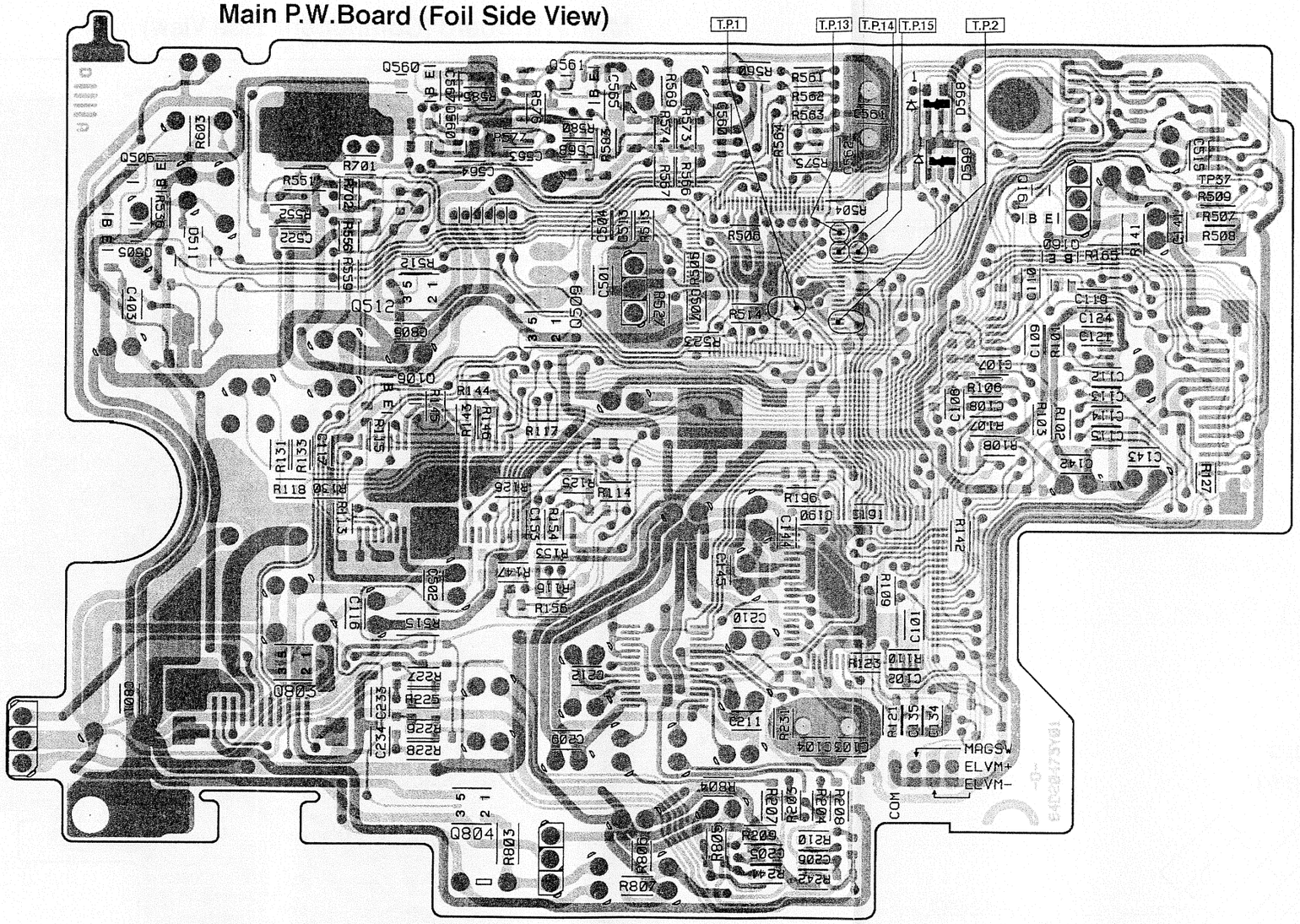


Elevator P.W.Board (Foil Side View)

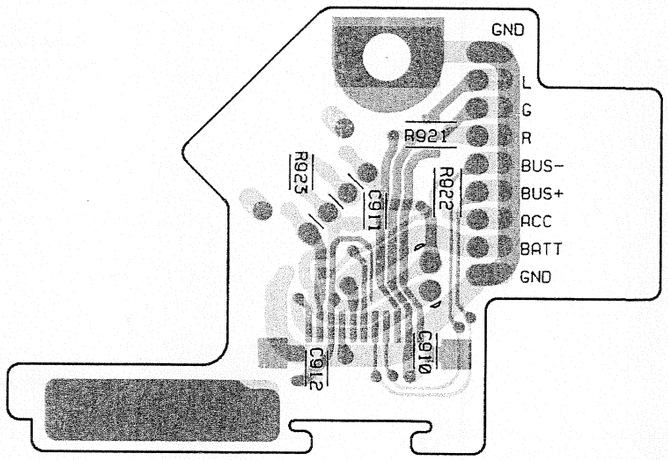
Gray Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

Parts Layout on P.W. Boards and Wiring Diagram (2/2)

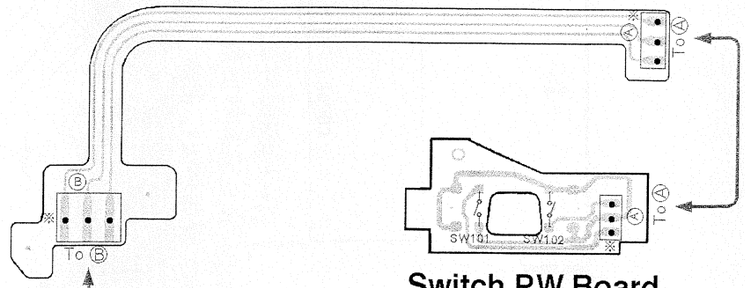
Main P.W.Board (Foil Side View)



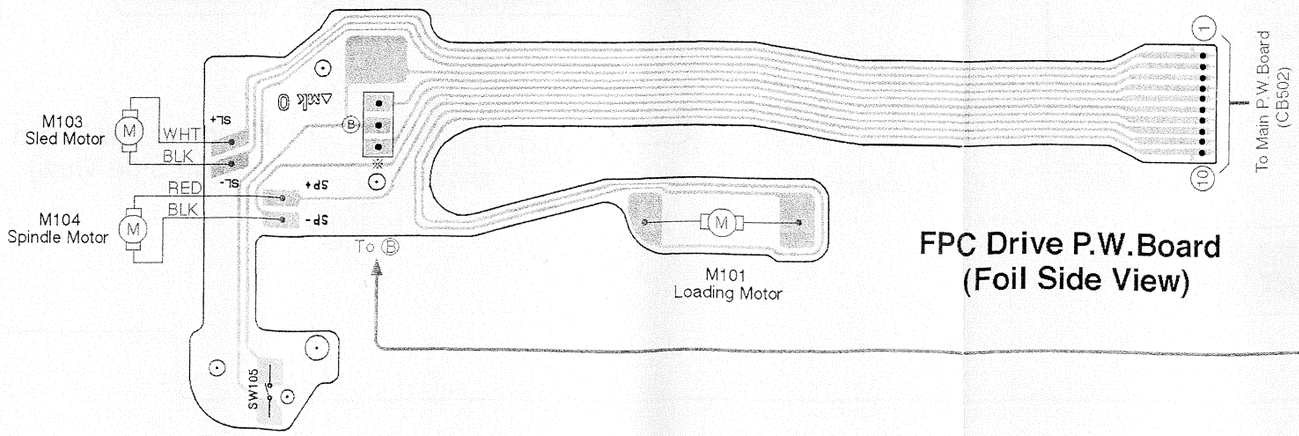
Connector P.W.Board
(Foil Side View)



FPC Switch P.W.Board
(Foil Side View)



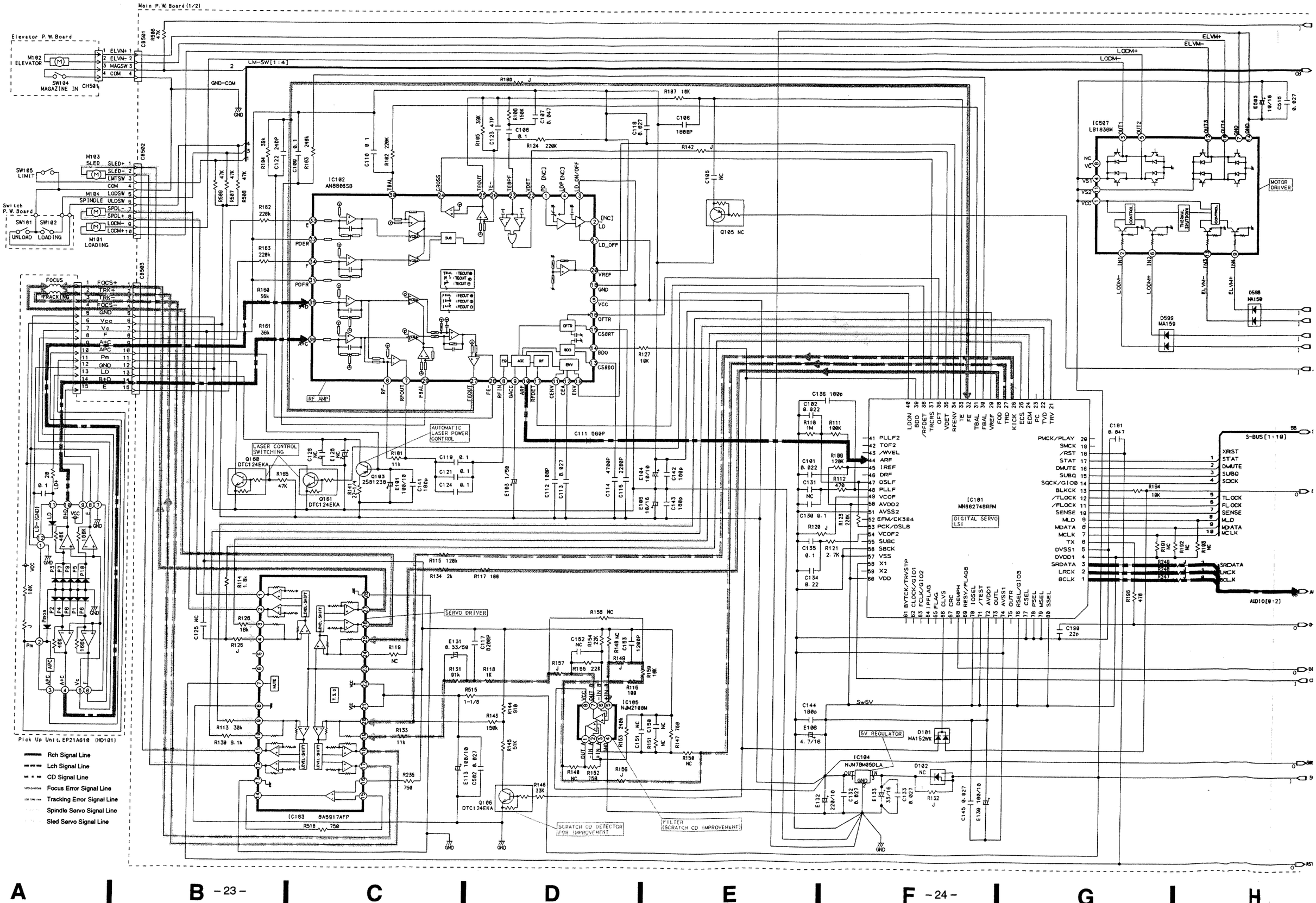
Switch P.W.Board
(Foil Side View)

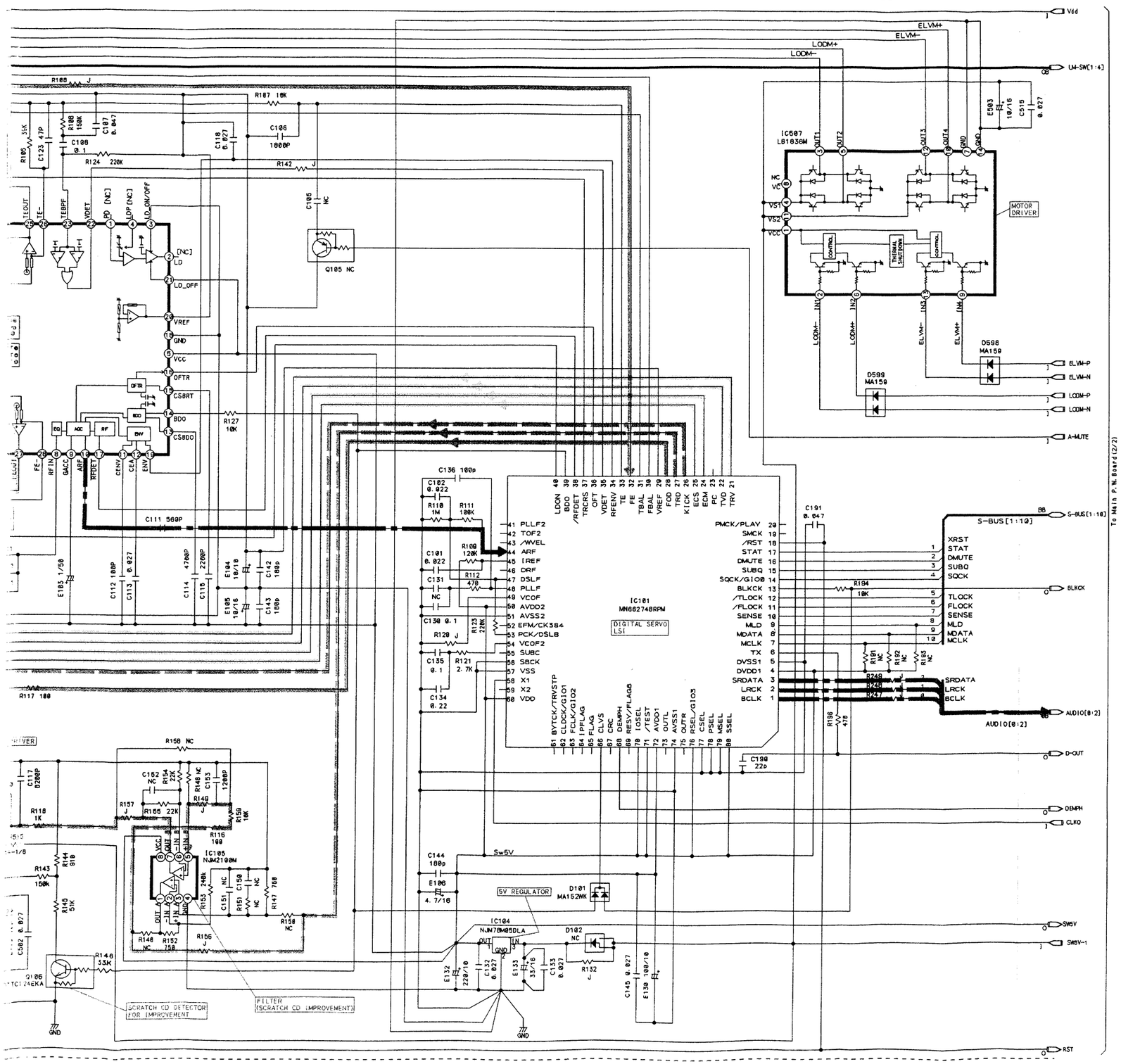


FPC Drive P.W.Board
(Foil Side View)

Gray Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

Schematic Diagram (1/2)





IC101

1	2.45V	19, 20	NC	38, 39	0V	58	1.74V
2	2.55V	21	2.55V	40	5.04V	59	NC
3	2.5V	22	2.56V	41–43	NC	60	5.1V
4	5.1V	23	NC	44	2.56V	61–65	NC
5	0V	24	2.55V	45	1.27V	66	5.1V
6	0.04V	25, 26	2.53V	46	NC	67	NC
7	5.08V	27	2.55V	47	2.57V	68	0.01V
8	0V	28	2.64V	48	1.73V	69	NC
9	5.08V	29	2.56V	49	0V	70–72	5.1V
10–12	0V	30	2.05V	50	5.1V	73	NC
13	0.05V	31	2.85V	51	0V	74	0V
14	5.05V	32	2.6V	52	NC	75	NC
15	0.5V–4.23V	33	2.51V	53	2.83V	76	5.1V
16	0V	34	2.54V	54	2.06V	77–79	0V
17	5.1V	35, 36	0V	55	NC	80	5.1V
18	5.07V	37	0.6V	56, 57	0V		

IC102

1, 2	NC	19	2.54V
3	0V	20	2.56V
4	NC	21	5.1V
5	5.1V	22	0V
6	2.55V	23	2.51V
7	2.96V	24	0.56V
8	2.57V	25	2.51V
9	3.8V	26	2.55V
10	1.62V	27	2.59V
11	4V	28	2.55V
12	3.34V	29	2.54V
13	3.71V	30–33	2.56V
14	0V	34	2.55V
15	3.69V	35, 36	2.57V
16–18	0V		

IC103

1	4.01V	17	3.72V
2	3.25V	18	3.7V
3, 4	2.56V	19	2.55V
5, 6	NC	20	2.56V
7	5.07V	21, 22	7.81V
8	0V	23	2.56V
9, 10	2.56V	24, 25	2.62V
11	3.69V	26	3.84V
12	3.7V	27	3.59V
13	0V	28	0V
14–16	2.56V		

IC104

1	5.1V
2	0V
3	7.88V

IC105

1–3	2.56V
4	0V
5–7	2.54V
8	5.1V

IC507

1	7.89V	8	NC
2	4.61V	9	4.61V
3	0V	10	0V
4	7.89V	11	7.89V
5	0V	12	0V
6	4.61V	13	4.61V
7	0V	14	0V

	E	C	B
Q103	4.4V	2.55V	3.76V
Q106	0V	2.54V	0V
Q160	0V	2.54V	0V
Q161	0V	0V	5.04V

[Measuring Conditions]

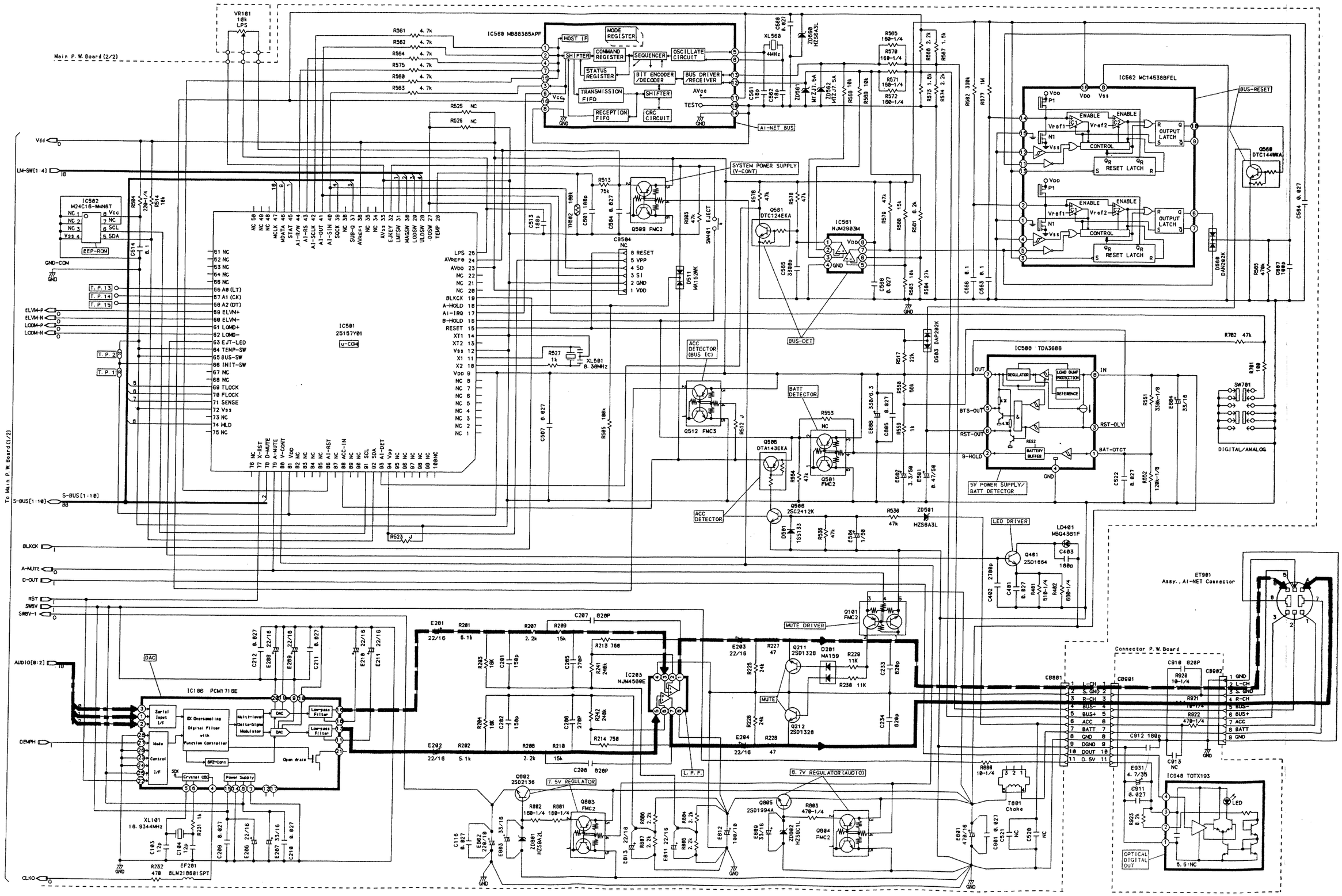
- Power Supply Voltage : DC14V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : Playing Disc No.1 at Room Temperature

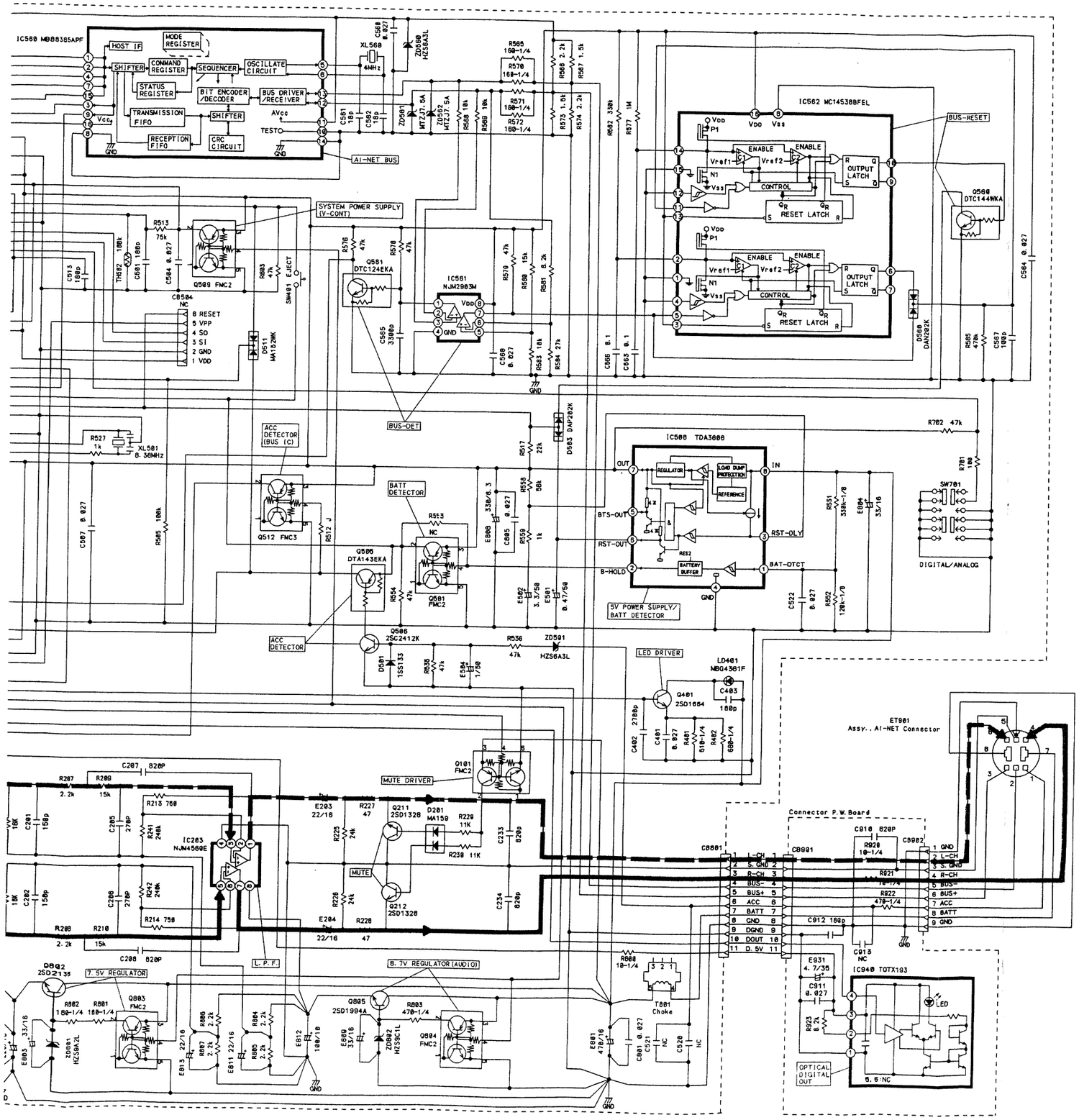
NOTE:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$

CHA-S624 CHA-S624

Schematic Diagram (2/2)





IC106

1	2.54V	15	5.1V
2	2.46V	16	2.56V
3	2.45V	17	NC
4	1.25V	18	2.54V
5	2.35V	19	0V
6	2.36V	20	5.1V
7	0V	21	NC
8, 9	5.1V	22	5.07V
10	0V	23, 24	0V
11	2.54V	25	5.1V
12	NC	26	0V
13	2.55V	27	0.01V
14	0V	28	0V

IC203

1, 2	4.39V
3	4.37V
4	0V
5	4.33V
6, 7	4.34V
8	8.77V

IC501

1–8	NC	26	2.6V	46	0V	78, 79	0V
9	5.08V	27	0.02V	47	5.08V	80	5.03V
10	2.63V	28	5.08V	48–55	NC	81	5.08V
11	2.6V	29	0.02V	56	5.08V	82–85	NC
12	0V	30	5.06V	57	5.01V	86	5.08V
13	NC	31	5.07V	58	0.01V	87	NC
14	0.01V	32, 33	0V	59–63	5.07V	88	5.03V
15	5.07V	34, 35	NC	64	0V	89, 90	NC
16	5.04V	36	5.08V	65	0.02V	91	0V
17	0.02V	37	0.44V–3.9V	66	5.08V	92	5.08V
18	4.64V	38	NC	67, 68	NC	93	1.97V
19	0.05V	39	5.04V	69–72	0V	94	0V
20–22	NC	40	0.36V	73	NC	95–100	NC
23	5.08V	41	0V	74	5.08V		
24	5.06V	42–44	5.08V	75, 76	NC		
25	1.69V	45	5.1V	77	5.07V		

IC502

1–4	0V
5	5.06V
6, 7	0V
8	5.06V

IC508

1	3.46V
2	4.96V
3	2.71V
4	0V
5	NC
6, 7	5.08V
8	13.11V

IC560

1	5.08V	10	0V
2, 3	0V	11	5.02V
4	5.08V	12	1.94V
5	1.81V	13	2.91V
6	1.67V	14	0V
7	5.08V	15	5.07V
8	0V	16	5.02V
9	5.02V		

IC561

1	2.53V
2	1.96V
3	2.92V
4	0V
5	2.03V
6	1.49V
7	4.63V
8	5.08V

IC562

1	0V	9	5.08V
2	4.11–4.94V	10	0V
3	5.08V	11	4.27V
4	0V	12	0V
5	4.64V	13	5.08V
6	0V–1.54V	14	4.06V
7	NC	15	0V
8	0V	16	5.08V

	E	C	B
Q211	0V	0V	-0.14V
Q212	0V	0V	-0.04V
Q401	4.46V	10.89V	5.08V
Q505	5.05V	5.03V	0.02V
Q506	0V	0.02V	0.62V
Q560	0V	4.77V	0V
Q561	0V	1.97V	2.53V
Q802	7.92V	13.06V	8.42V
Q805	8.79V	13.06V	9.4V

	1	2	3	4	5
Q101	NC	-0.05V	13.11V	0V	0V
Q501	NC	5.04V	5.08V	4.96V	0V
Q509	NC	5.06V	5.08V	5.03V	0V
Q512	NC	5.02V	5.08V	5.03V	0V
Q803	NC	12.96V	13.06V	5.03V	0V
Q804	NC	12.99V	13.06V	5.03V	0V

[Measuring Conditions]

- Power Supply Voltage : DC14V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions : Playing Disc No.1 at Room Temperature

NOTE:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Description of IC Terminal

25157Y01 : IC501

No.	Symbol	I/O	Terminal Description
1 ~ 8	NC	—	No Connection.
9	V_{DD}	—	Positive Power Supply Terminal.
10	X2	—	Main System Clock OSC Connect Terminal.
11	X1		
12	V_{SS}	—	GND Connect Terminal.
13	XT2	—	Sub System Clock OSC Connect Terminal.
14	XT1		
15	RESET	I	System Reset Input Terminal.
16	B-HOLD	I	BATT Input Terminal.
17	Ai-IRQ	I	Ai-NET Input Terminal.
18	A-HOLD	I	ACC Input Terminal.
19	BLKCK	I	MN662748RPM Block Clock Input Terminal.
20 ~ 22	NC	—	No Connection.
23	AV_{DD}	—	Analog Power Supply Terminal for A/D Converter.
24	$AV_{REF}0$	—	Reference Voltage Input Terminal for A/D Converter.
25	LPS	I	Linear Position Sensor Input Terminal. (A/D)
26	TEMP	I	Temperature Thermistor Input Terminal. (A/D)
27	DOSW	I	Optical Output Detection Terminal.
28	ULDSW	I	Unloading Detection Terminal.
29	LODSW	I	Loading Detection Terminal.
30	MAGSW	I	Magazine Detection Terminal.
31	LMT SW	I	Limit Detection Terminal.
32	EJKEY	I	EJECT-KEY Detection Terminal.
33	AV_{SS}	—	GND Connect Termianl for A/D Converter.
34	NC	—	No Connection.
35			
36	$AV_{REF}1$	—	Reference Voltage Input Terminal for D/A Converter.
37	SUB-Q	I	MN662748RPM SUB CODE-Q Signal Input Terminal.
38	NC	—	No Connection.
39	SQCK	O	MN662748RPM SUB CODE-Q Reading Clock Output Terminal.
40	Ai-SIN	I	MB88385APF Data Input Terminal.
41	Ai-SOUT	O	MB88385APF Data Output Terminal.
42	Ai-SCLK	O	MB88385APF Clock Output Terminal.
43	Ai-RS	O	MB88385APF Register Select Output Terminal.
44	Ai-R/W	O	MB88385APF Register R/W Select Output Terminal.

No.	Symbol	I/O	Terminal Description
45	STAT	I	MN662748RPM Status Signal Input Terminal.
46	MDATA	O	MN662748RPM Control Data Output terminal.
47	MCLK	O	MN662748RPM Control Clock Output Terminal.
48 ~ 55	NC	—	No Connection.
56	A0 (LT)	O	MN662748RPM Auto Adjustment Output Terminal.
57	A1 (CK)		
58	A2 (DT)		
59	ELVM+	O	Elevator Motor Control Output (+) Terminal.
60	ELVM-	O	Elevator Motor Control Output (-) Terminal.
61	LODM+	O	Loading Motor Control Output (+) Terminal.
62	LODM-	O	Loading Motor Control Output (-) Terminal.
63	EJT-LED	O	EJECT-KEY Lighting LED Control Output Terminal.
64	TEMP-SW	I	Low-Temperature Detection Terminal.
65	BUS-SW	I	BUS Switching Input Terminal.
66	INIT-SW	I	LPS Set Up Terminal.
67 ~ 68	NC	—	No Connection.
69	TLOCK	I	MN662748RPM Tracking Pull In Signal Input Terminal.
70	FLOCK	I	MN662748RPM Focus Pull In Signal Input Terminal.
71	SENSE	I	MN662748RPM SENSE Signal Input Terminal.
72	V_{SS}	—	GND Terminal.
73	NC	—	No Connection.
74	MLD	O	MN662748RPM Control Latch Output Terminal.
75 ~ 76	NC	O	No Connection.
77	X-RST	O	Surrounding Reset Terminal.
78	D-MUTE	O	Digital Mute Output Terminal.
79	A-MUTE	O	Analog Mute Output Terminal.
80	V-CONT	O	Power Supply Control Terminal.
81	V_{DD}	—	Positive Power Supply Terminal.
82 ~ 85	NC	—	No Connection.
86	Ai-RST	O	MB88385APF Reset Signal Output Terminal.
87	NC	—	No Connection.
88	ACC-IN	I	ACC Detection Terminal.
89 ~ 90	NC	—	No Connection.
91	SCL	O	EEP-ROM Clock Terminal.

No.	Symbol	I/O	Terminal Description
92	SDA	I/O	EEP-ROM Data Terminal.
93	Ai-DET	I	Ai-NET BUS-BUSY Detection Terminal.
94	VPP	—	GND Connect Terminal.
95	NC	—	No Connection.
≀			
100			

Electrical Parts List

Capacitor : μF=microfarads,pF=picofarads

Abbreviations

RES.= Resistor	CAP.= Capacitor
C.F.= Carbon Film	ELY.= Electrolytic
M.F.= Metal Film	CER.= Ceramic
M.O.= Metal Oxide Film	MYL.= Mylar
M.P.= Metal Plate	TAN.= Tantalum
TR. = Transistor	POLY.= Polystyrol
TRANS.= Transformer	PP. = Polypropylene
CP. = Chip	PLT.= Polyethylene
	PF. = Polyester Film

Symbol No.	Part No.	Description
Main P.W.Board		
IC's		
IC101	51T15522Y01	MN662748RPM
IC102	51T65510W01	AN8806SB
IC103	51T15547Y02	BA5917AFP
IC104	51T95150W01	NJM78M05DLA
IC105	51T16025W01	NJM2100M
IC106	51T25002Y01	PCM1716E
IC203	51T93338F01	NJM4560E
IC501	51T25157Y01	25157Y01
IC502	51T25162Y01	M24C16-WMN6T
IC507	51T45571W02	LB1836M
IC508	51T85450W01	TDA3606
IC560	51T55070W04	MB88385APF
IC561	51T93332F01	NJM2903M
IC562	51T25370W01	MC14538BFEL
Transistors		
Q101	48T73888F12	CP., FMC2
Q103	48T84234F03	2SB1238
Q106	48T62967F03	CP., DTC124EKA
Q160	48T62967F03	CP., DTC124EKA
Q161	48T62967F03	CP., DTC124EKA
Q211	48T63788F01	CP., 2SD1328
Q212	48T63788F01	CP., 2SD1328
Q401	48T80614F01	CP., 2SD1664
Q501	48T73888F12	CP., FMC2
Q505	48T62966F01	CP., DTA143EKA
Q506	48T63417F01	CP., 2SC2412K
Q509	48T73888F12	CP., FMC2
Q512	48T73888F13	CP., FMC3
Q560	48T62967F08	CP., DTC144WKA
Q561	48T62967F03	CP., DTC124EKA
Q802	48T65256W03	2SD2136
Q803	48T73888F12	CP., FMC2
Q804	48T73888F12	CP., FMC2
Q805	48T93828F01	2SD1994A
Diodes		
D101	48T25651W02	CP., MA152WK
D201	48T81063F01	CP., MA159
D501	48T68828F11	1SS133
D503	48T63463F01	CP., DAP202K
D511	48T25651W02	CP., MA152WK
D560	48T63462F01	CP., DAN202K
D598	48T81063F01	CP., MA159
D599	48T81063F01	CP., MA159
ZD501	48T25766W03	Zener, HZS6A3L
ZD560	48T25766W03	Zener, HZS6A3L
ZD561	48T45012W35	Zener, MTZJ7.5A
ZD562	48T45012W35	Zener, MTZJ7.5A
ZD801	48T25766W20	Zener, HZS9A2L
ZD802	48T25766W24	Zener, HZS9C1L
Crystals		
XL101	91T25806W92	16.9344MHz
XL501	91T15285W10	CER., Lock 8.38MHz
XL560	91T45118W12	4MHz
Switches		
SW401	40T55182W03	Tact, SKHVBB (EJECT)
SW701	40T45282W01	Slide, SLD-42-508 (DIGITAL/ANALOG)
Coils		
EF201	24T95457W06	Inductor, CP. BLM21B601SPT
T801	24T65097W01	Choke
LED		
LD401	48T75203W01	MBG4361F (GRN)

Symbol No.	Part No.	Description
Thermistor		
TH502	48T15688Y01	CP., 100K ohm
Capacitors		
C101	08T15399W01	CP., 0.022µF
C102	08T15399W01	CP., 0.022µF
C103	08S82122F15	CP., 12pF
C104	08S82122F15	CP., 12pF
C106	08S65128F60	CP., 1800pF
C107	08T15399W03	CP., 0.047µF
C108	08S35374W01	CP., 0.1µF
C109	08S35374W01	CP., 0.1µF
C110	08S35374W01	CP., 0.1µF
C111	08S82122F55	CP., 560pF
C112	08S82122F37	CP., 100pF
C113	08T15399W04	CP., 0.027µF
C114	08S65128F65	CP., 4700pF
C115	08S65128F61	CP., 2200pF
C116	08T15399W04	CP., 0.027µF
C117	08S65128F68	CP., 8200pF
C118	08T15399W04	CP., 0.027µF
C119	08S35374W01	CP., 0.1µF
C121	08S35374W01	CP., 0.1µF
C122	08S82122F46	CP., 240pF
C123	08S82122F29	CP., 47pF
C124	08S35374W01	CP., 0.1µF
C130	08S35374W01	CP., 0.1µF
C132	08T15399W04	CP., 0.027µF
C133	08T15399W04	CP., 0.027µF
C134	08T55487W02	CP., 0.22µF
C135	08S35374W01	CP., 0.1µF
C136	08S82122F37	CP., 100pF
C141	08S82122F43	CP., 180pF
C142	08S82122F43	CP., 180pF
C143	08S82122F43	CP., 180pF
C144	08S82122F43	CP., 180pF
C145	08T15399W04	CP., 0.027µF
C153	08S65128F58	CP., 1200pF
C190	08S65128F19	CP., 22pF
C191	08T15399W03	CP., 0.047µF
C201	08S82122F41	CP., 150pF
C202	08S82122F41	CP., 150pF
C205	08S82122F47	CP., 270pF
C206	08S82122F47	CP., 270pF
C207	08S82122F59	CP., 820pF
C208	08S82122F59	CP., 820pF

Symbol No.	Part No.	Description
C209	08T15399W04	CP., 0.027µF
C210	08T15399W04	CP., 0.027µF
C211	08T15399W04	CP., 0.027µF
C212	08T15399W04	CP., 0.027µF
C233	08S82122F59	CP., 820pF
C234	08S82122F59	CP., 820pF
C401	08T15399W04	CP., 0.027µF
C402	08S65128F62	CP., 2700pF
C403	08S82122F43	CP., 180pF
C501	08S82122F43	CP., 180pF
C502	08T15399W04	CP., 0.027µF
C504	08T15399W04	CP., 0.027µF
C507	08T15399W04	CP., 0.027µF
C513	08S82122F43	CP., 180pF
C514	08S35374W01	CP., 0.1µF
C515	08T15399W04	CP., 0.027µF
C522	08T15399W04	CP., 0.027µF
C560	08T15399W04	CP., 0.027µF
C561	08S82122F19	CP., 18pF
C562	08S82122F19	CP., 18pF
C563	08S35374W01	CP., 0.1µF
C564	08T15399W04	CP., 0.027µF
C565	08S65128F63	CP., 3300pF
C566	08S35374W01	CP., 0.1µF
C567	08S82122F37	CP., 100pF
C568	08T15399W04	CP., 0.027µF
C801	08T15399W04	CP., 0.027µF
C805	08T15399W04	CP., 0.027µF
E101	23S75372W02	ELY., 100µF / 10V
E103	23S75372W15	ELY., 1µF / 50V
E104	23T74437F21	TAN., 10µF / 10V
E105	23T74437F32	TAN., 10µF / 16V
E106	23T74437F30	TAN., 4.7µF / 16V
E113	23S75372W02	ELY., 100µF / 10V
E130	23S75372W02	ELY., 100µF / 10V
E131	23S75372W12	ELY., 0.33µF / 50V
E132	23S75372W03	ELY., 220µF / 10V
E133	23S75372W06	ELY., 33µF / 16V
E201	23S75372W05	ELY., 22µF / 16V
E202	23S75372W05	ELY., 22µF / 16V
E203	23S75372W05	ELY., 22µF / 16V
E204	23S75372W05	ELY., 22µF / 16V
E206	23S75372W05	ELY., 22µF / 16V
E207	23S75372W06	ELY., 33µF / 16V
E208	23S75372W05	ELY., 22µF / 16V
E209	23S75372W05	ELY., 22µF / 16V
E210	23S75372W05	ELY., 22µF / 16V
E211	23S75372W05	ELY., 22µF / 16V
E501	23S75372W13	ELY., 0.47µF / 50V

Symbol No.	Part No.	Description
E502	23S75372W17	ELY., 3.3µF / 50V
E503	23S75372W04	ELY., 10µF / 16V
E504	23S75372W15	ELY., 1µF / 50V
E801	23T75427W01	ELY., 470µF / 16V
E802	23S75372W03	ELY., 220µF / 10V
E803	23S75372W06	ELY., 33µF / 16V
E804	23S75372W06	ELY., 33µF / 16V
E808	23S75372W01	ELY., 330µF / 6.3V
E809	23S75372W06	ELY., 33µF / 16V
E811	23S75372W05	ELY., 22µF / 16V
E812	23S75372W02	ELY., 100µF / 10V
E813	23S75372W05	ELY., 22µF / 16V
Resistors		(All resistors are chip 1/10W±5% unless otherwise noted.)
R101	06S64995F78	11K ohm
R102	06S64996F10	220K ohm
R103	06S64996F11	240K ohm
R104	06S64995F91	39K ohm
R105	06S64995F91	39K ohm
R106	06S64996F06	150K ohm
R107	06S64995F77	10K ohm
R108	——	Jumper
R109	06S64996F04	120K ohm
R110	06S64996F26	1M ohm
R111	06S64996F02	100K ohm
R112	06S64995F45	470 ohm
R113	06S64995F88	30K ohm
R114	06S64995F59	1.8K ohm
R115	06S64996F04	120K ohm
R116	06S64995F29	100 ohm
R117	06S64995F29	100 ohm
R118	06S64995F53	1K ohm
R120	——	Jumper
R121	06S64995F63	2.7K ohm
R123	06S64996F10	220K ohm
R124	06S64996F10	220K ohm
R125	——	Jumper
R126	06S64995F83	18K ohm
R127	06S64995F77	10K ohm
R130	06S64995F76	9.1K ohm
R131	06S64996F01	91K ohm
R132	——	Jumper
R133	06S64995F78	11K ohm
R134	06S64995F60	2K ohm
R141	06S70072F13	22 ohm 1/4W
R142	——	Jumper
R143	06S64996F06	150K ohm

Symbol No.	Part No.	Description
R144	06S64995F52	910 ohm
R145	06S64995F94	51K ohm
R146	06S64995F89	33K ohm
R147	06S64995F50	750 ohm
R149	——	Jumper
R152	06S64995F50	750 ohm
R153	06S64996F11	240K ohm
R154	06S64995F85	22K ohm
R155	06S64995F85	22K ohm
R156	——	Jumper
R157	——	Jumper
R159	06S64995F77	10K ohm
R160	06S64995F90	36K ohm
R161	06S64995F90	36K ohm
R162	06S64996F10	220K ohm
R163	06S64996F10	220K ohm
R165	06S64995F93	47K ohm
R194	06S64995F77	10K ohm
R196	06S64995F45	470 ohm
R201	06S64995F70	5.1K ohm
R202	06S64995F70	5.1K ohm
R203	06S64995F82	16K ohm
R204	06S64995F82	16K ohm
R207	06S64995F61	2.2K ohm
R208	06S64995F61	2.2K ohm
R209	06S64995F81	15K ohm
R210	06S64995F81	15K ohm
R213	06S64995F50	750 ohm
R214	06S64995F50	750 ohm
R225	06S64995F86	24K ohm
R226	06S64995F86	24K ohm
R227	06S64995F21	47 ohm
R228	06S64995F21	47 ohm
R229	06S64995F78	11K ohm
R230	06S64995F78	11K ohm
R231	06S64995F53	1K ohm
R232	06S64995F45	470 ohm
R235	06S64995F50	750 ohm
R241	06S64996F11	240K ohm
R242	06S64996F11	240K ohm
R247	——	Jumper
R248	——	Jumper
R249	——	Jumper
R401	06S70072F46	510 ohm 1/4W
R402	06S70072F49	680 ohm 1/4W
R504	06S70072F37	220 ohm 1/4W
R505	06S64996F02	100K ohm
R506	06S64995F93	47K ohm
R507	06S64995F93	47K ohm

Symbol No.	Part No.	Description
R508	06S64995F93	47K ohm
R509	06S64995F93	47K ohm
R512	——	Jumper
R513	06S64995F98	75K ohm
R514	06S64995F77	10K ohm
R515	06S53331F41	1 ohm 1/8W
R517	06S64995F85	22K ohm
R518	06S64995F50	750 ohm
R523	——	Jumper
R527	06S64995F53	1K ohm
R535	06S64995F93	47K ohm
R536	06S64995F93	47K ohm
R551	06S95214F14	330K ohm 1/8W
R552	06S95214F13	120K ohm 1/8W
R554	06S64995F93	47K ohm
R556	06S64995F95	56K ohm
R559	06S64995F53	1K ohm
R560	06S64995F69	4.7K ohm
R561	06S64995F69	4.7K ohm
R562	06S64995F69	4.7K ohm
R563	06S64995F69	4.7K ohm
R564	06S64995F69	4.7K ohm
R565	06S70072F34	160 ohm 1/4W
R566	06S64995F61	2.2K ohm
R567	06S64995F57	1.5K ohm
R568	06S64995F77	10K ohm
R569	06S64995F77	10K ohm
R570	06S70072F34	160 ohm 1/4W
R571	06S70072F34	160 ohm 1/4W
R572	06S70072F34	160 ohm 1/4W
R573	06S64995F57	1.5K ohm
R574	06S64995F61	2.2K ohm
R575	06S64995F69	4.7K ohm
R576	06S64995F93	47K ohm
R577	06S64996F26	1M ohm
R578	06S64995F93	47K ohm
R579	06S64995F93	47K ohm
R580	06S64995F81	15K ohm
R581	06S64995F75	8.2K ohm
R582	06S64996F14	330K ohm
R583	06S64995F77	10K ohm
R584	06S64995F87	27K ohm
R585	06S64996F18	470K ohm
R600	06S70072F05	10 ohm 1/4W
R603	06S64995F93	47K ohm
R701	06S64995F29	100 ohm
R702	06S64995F93	47K ohm
R801	06S70072F34	160 ohm 1/4W
R802	06S70072F34	160 ohm 1/4W

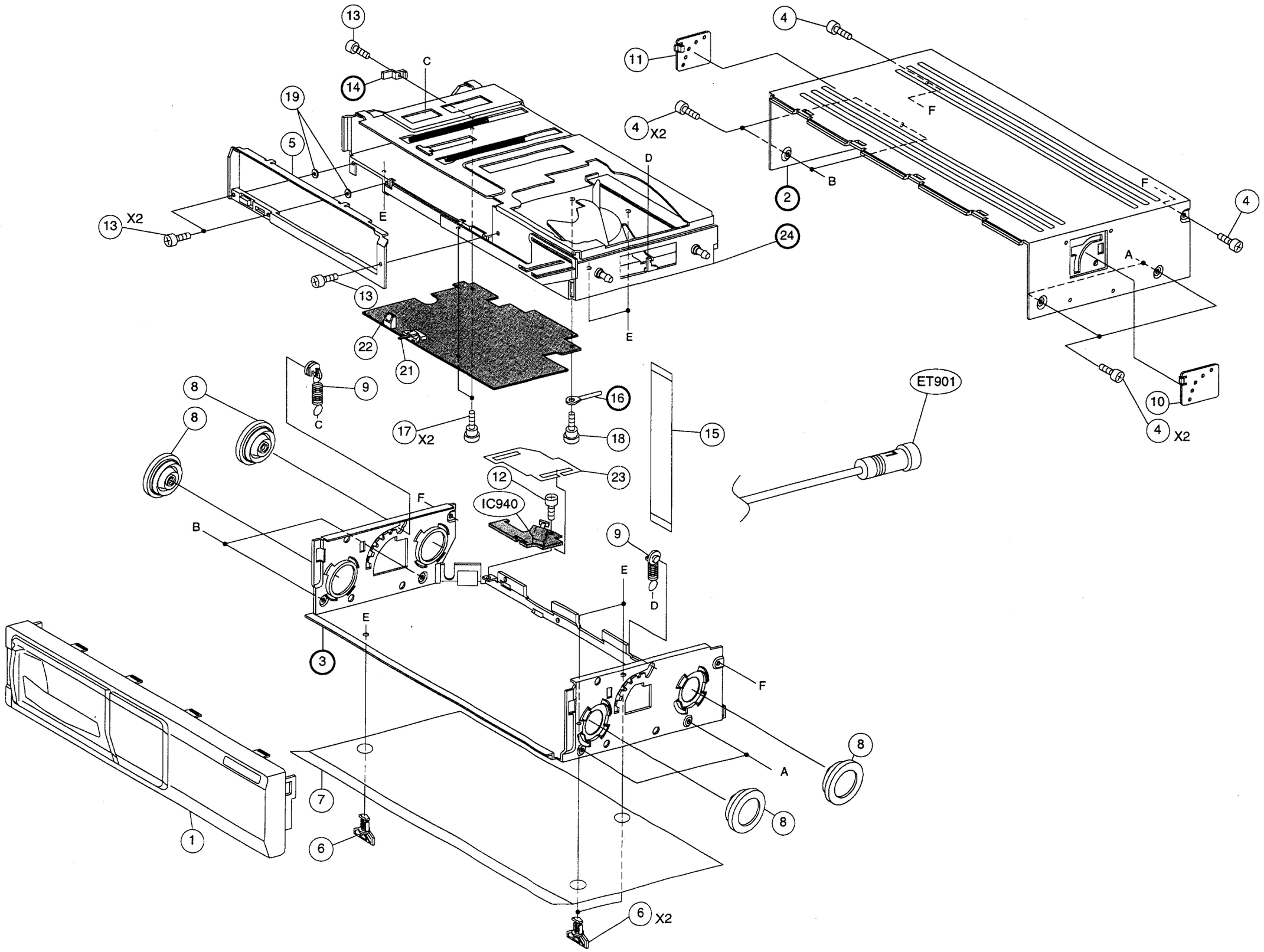
Symbol No.	Part No.	Description
R803	06S70072F45	470 ohm 1/4W
R804	06S64995F61	2.2K ohm
R805	06S64995F61	2.2K ohm
R806	06S64995F61	2.2K ohm
R807	06S64995F61	2.2K ohm
Connectors		
CB501	09T90625F54	WTB, TXL-04PL
CB502	09T45435W10	FFC, 52207-1090
CB503	09T45434W15	FFC, 52271-1590
CB801	09T45434W11	FFC, 52271-1190
Connector P.W.Board		
Capacitors		
C910	08S82122F59	CP., 820pF
C911	08T15399W04	CP., 0.027μF
C912	08S82122F43	CP., 180pF
E931	23S75372W09	ELY., 4.7μF / 35V
Resistors		(All resistors are chip 1/4W±5% unless otherwise noted.)
R920	06S70072F05	10 ohm
R921	06S70072F05	10 ohm
R922	06S70072F45	470 ohm
R923	06S64995F75	8.2K ohm 1/10W
Connectors		
CB901	09T45435W11	FFC, 52207-1190
CB902	09T55229W59	WTB, SC25-09WN
Elevator P.W.Board		
Connector		
CH501	01T65226W01	Assy., Wire Motor 4P

Symbol No.	Part No.	Description
Miscellaneous		
ET901	01T55619W13	Assy., Ai-NET Connector
HD101	81B10425Y01	Pick-Up Unit, EP21A610
IC940	51T75111W01	IC, TOTX193 (Digital Output Terminal)
M101	59T65085W01	Motor, Loading (7V-370mA)
M102	59T65085W01	Motor, Elevator (7V-370mA)
M103	59T65085W01	Motor, Sled (7V-370mA)
M104	01V83900W16	Assy., Spindle Motor (2V-90mA)
SW101	40T35543W02	Switch, Detector (UNLOAD)
SW102	40T35543W02	Switch, Detector (LOADING)
SW104	40T15222W01	Switch, Detector (MAGAZINE IN)
SW105	40T71025F03	Switch, Detector (LIMIT)
VR101	18T55678W01	Volume, Slide RS32111 10K ohm

Symbol No.	Part No.	Description

CHA-S624	CHA-S624

Exploded View (Cabinet)



Cabinet Assembly Parts List

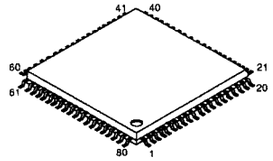
NOTE:Parts without part number are not supplied.

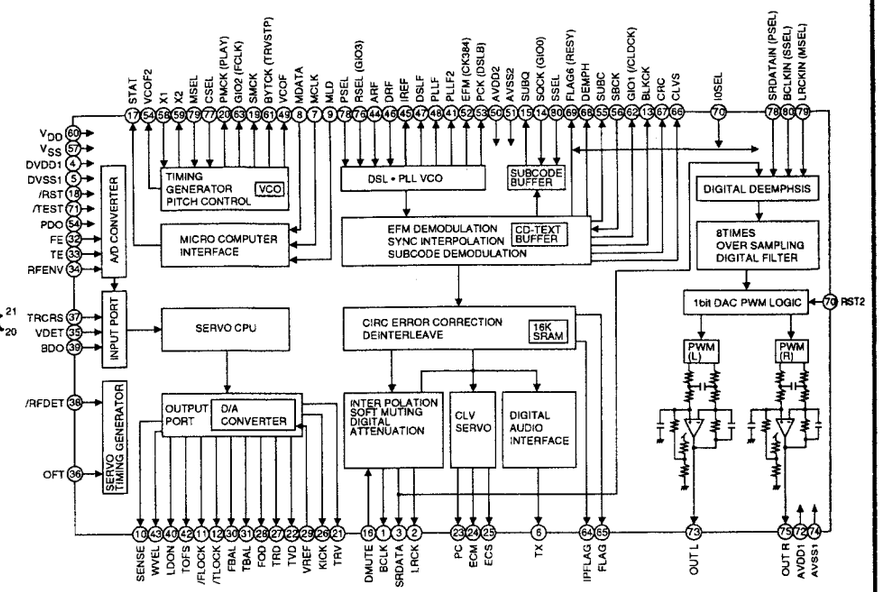
Symbol No.	Index	Part No.	Description
1	5-B	13T25267Y01	Assy., Front Escutcheon
4		03A61184W04	Screw, Bind (M2.6X5)
5	2-B	64B20507Y02	Assy., Plate Inner
6		55A20491Y01	Key, Lock
7	5-C	54B20712Y01	Card, Caution
8		75C10781Y01	Damper, DT (D)
9		07A61053W04	Assy., Bracket Spring
10	3-G	15B20488Y03	Cover, SP (R)
11	1-D	15B20488Y04	Cover, SP (L)
12	3-C	03S38013W36	Screw, Bind (M2.6X4)
13		03S94385F48	Screw, Pan Nylok (M2X4)
15	3-D	30T65173W01	Wire, Flat
17	3-C	03A38056W01	Screw, Special (M2.6X6)
18	3-D	03A38056W02	Screw, Special (M2.6X6)
19	1-B	14A11387Y01	Insulator, Cover Plate
21	3-C	36A81548W01	Knob, Switch
22	3-C	43A70497W01	Spacer, LED
23	3-D	14A20715Y01	Insulator, P.W.Board

Semi-Conductor Lead Identifications

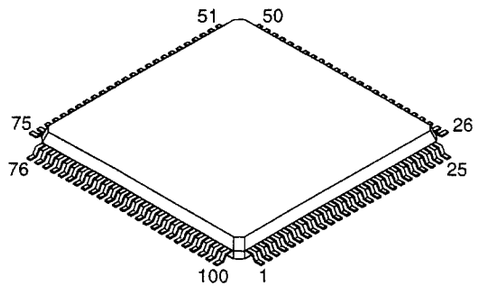
NOTE : For the parts not mentioned, refer to the Schematic Diagram.

MN662748RPM: IC101





25157Y01 : IC501

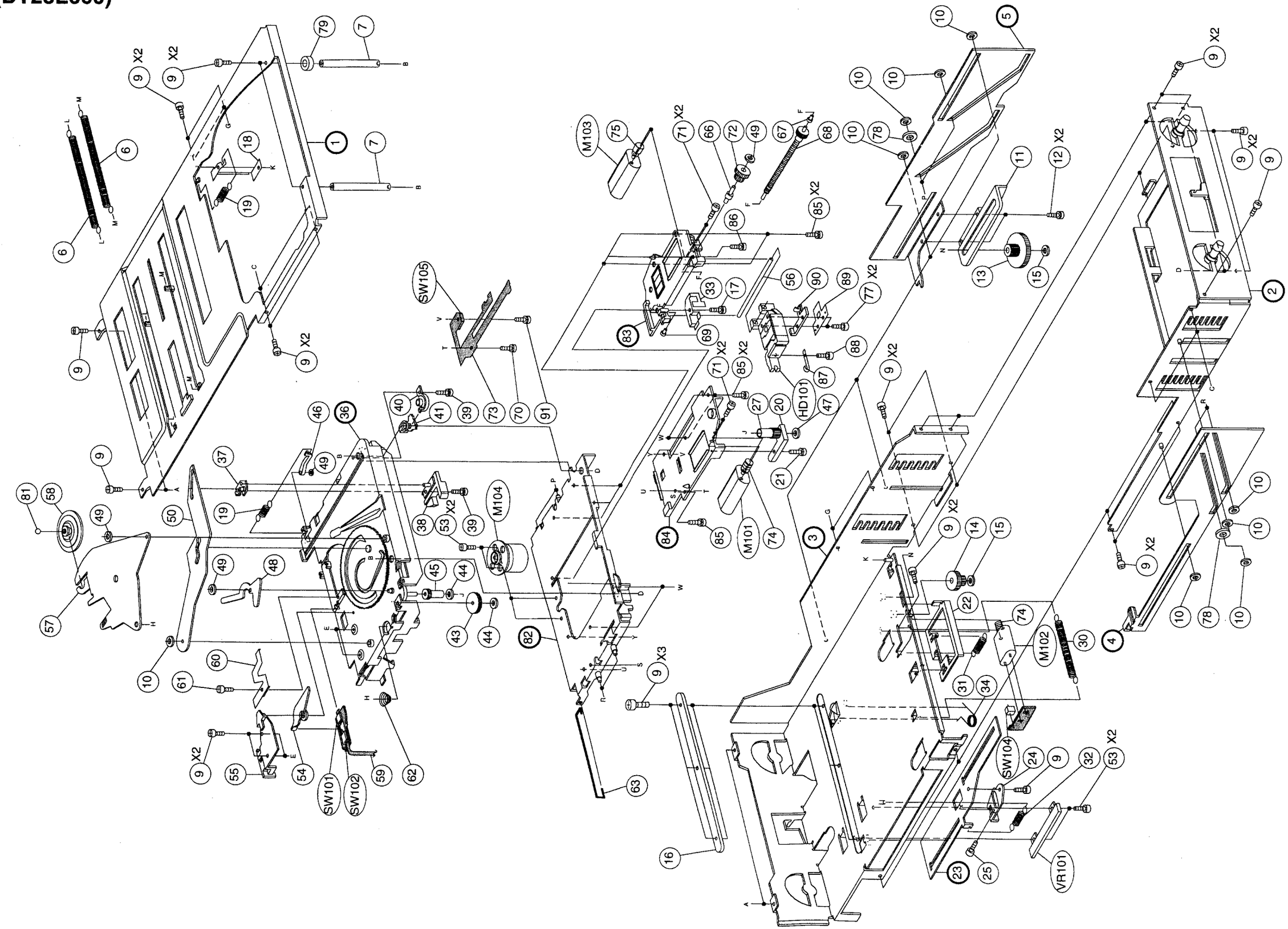


PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O
1	NC	—	26	TEMP	I	51	NC	—	76	NC	—
2	NC	—	27	DOSW	I	52	NC	—	77	X-RST	O
3	NC	—	28	ULDSW	I	53	NC	—	78	D-MUTE	O
4	NC	—	29	LODSW	I	54	NC	—	79	A-MUTE	O
5	NC	—	30	MAGSW	I	55	NC	—	80	V-CONT	O
6	NC	—	31	LMT SW	I	56	A0 (LT)	O	81	V_{DD}	—
7	NC	—	32	EJKEY	I	57	A1 (CK)	O	82	NC	—
8	NC	—	33	AV_{SS}	—	58	A2 (DT)	O	83	NC	—
9	V_{DD}	—	34	NC	—	59	ELVM+	O	84	NC	—
10	X2	—	35	NC	—	60	ELVM-	O	85	NC	—
11	X1	—	36	AV_{REF1}	—	61	LODM+	O	86	Ai-RST	O
12	V_{SS}	—	37	SUB-Q	I	62	LODM-	O	87	NC	—
13	XT2	—	38	NC	—	63	EJT-LED	O	88	ACC-IN	I
14	XT1	—	39	SQCK	O	64	TEMP-SW	I	89	NC	—
15	RESET	I	40	Ai-SIN	I	65	BUS-SW	I	90	NC	—
16	B-HOLD	I	41	Ai-SOUT	O	66	INIT-SW	I	91	SCL	O
17	Ai-IRQ	I	42	Ai-SCLK	O	67	NC	—	92	SDA	I/O
18	A-HOLD	I	43	Ai-RS	O	68	NC	—	93	Ai-DET	I
19	BLKCK	I	44	Ai-R/W	O	69	TLOCK	I	94	V_{PP}	—
20	NC	—	45	STAT	I	70	FLOCK	I	95	NC	—
21	NC	—	46	MDATA	O	71	SENSE	I	96	NC	—
22	NC	—	47	MCLK	O	72	V_{SS}	—	97	NC	—
23	AV_{DD}	—	48	NC	—	73	NC	—	98	NC	—
24	AV_{REF0}	—	49	NC	—	74	MLD	O	99	NC	—
25	LPS	I	50	NC	—	75	NC	—	100	NC	—

CHA-S624	CHA-S624

Exploded View (CD Mechanism)

(DT23L060)



CD Mechanism Assembly Parts List

NOTE:Parts without part number are not supplied.

Symbol No.	Index	Part No.	Description
6		41B51993W01	Spring, Extension
7		47A51917W01	Shaft, Guide
9		03S94385F19	Screw, Pan Nylok (M2X2.5)
10		04B41345P22	Washer, Lock (M2.6)
11	2-F	44B51886W01	Rack, Elevator
12	2-F	03S40014G07	Screw, W / Washer (M2X4)
13	2-F	44A60088W01	Gear, Rack
14	3-F	44A60089W01	Gear, Wheel
15		04B41345P24	Washer, Lock (M2.1)
16	5-D	15A51889W01	Guide, Magazine
17	2-E	03D40121T56	Screw, W / Double Washer (M2X4)
18	2-B	45A51880W01	Stopper, Tray
19		41B51993W02	Spring, Extension
20	3-E	45A60160W01	Spacer, Bracket Motor
21	3-E	03S40014G16	Screw, W/Washer (M2X14)
22	4-F	45A51874W01	Slide, Magazine Switch
24	5-F	07A51882W01	Bracket, Sensor
25	5-F	03S94385F11	Screw, Pan Nylok (M2X5.2)
27	3-E	44A52035W01	Gear, Drive
30	4-F	41B51993W03	Spring, Extension
31	4-F	41B51993W04	Spring, Extension
32	5-G	41B51993W05	Spring, Extension
33	2-D	07B91155W01	Stopper, Shaft (B)
34	4-F	41A51996W01	Spring, Torsion
37	3-B	01A51932W01	Assy., Riv. Bracket Push Pull
38	3-C	45A51898W01	Arm, Push Pull
39	3-C	03S40014G61	Screw, W / Washer (M2X5)
40	3-C	15A51890W01	Guide, Chassis Tray
41	3-C	07A51884W01	Bracket, Corner
43	4-C	44A52036W01	Gear, Cam
44	4-C	04B41345P15	Washer, Lock (M1.2)
45	4-C	44A51896W01	Gear, Driven
46	3-C	45A51894W01	Arm, Tray (A)
47	3-E	04B41345P02	Washer, Lock (M1.7)
48	4-B	01A51937W01	Assy., Riv. Lever Slide
49		04B41345P12	Washer, Lock (M1.7)
50	3-B	45A52034W01	Lever, Cam
53		03S94385F01	Screw, Pan Nylok (M1.7X2.3)
54	5-B	45A51887W01	Arm, Switch
55	5-B	15B51891W01	Guide, Tray Side
56	2-E	47A60169W01	Shaft, Pick-Up
57	4-A	07B51879W01	Bracket, Clamper
58	3-A	43A91063W01	Table, Clamper-D
59	5-C	84T65057W01	FPC Switch P.W.Board
60	4-B	41A91064W01	Spring, Clamper
61	4-B	03S94385F07	Screw, Pan Nylok (M2X2)
62	5-C	41A51995W01	Spring, Compression
63	5-D	41A51923W01	Spring, Rod
66	2-D	46A60171W01	Stud, Middle
67	2-E	43A60164W01	Bush, Screw (A)
68	2-E	01V61300W99	Assy., Shaft Screw
69	2-D	43A60165W01	Bush, Screw (B)
70	3-D	03S40014G62	Screw, W / Washer (M2X3)
71		03S94385F58	Screw, Pan Nylok (M2X3.5)
72	2-E	44A60162W01	Gear, Middle
73	3-C	84T15533Y01	FPC Drive P.W.Board
74		44A10811Y01	Worm, STD
75	2-D	44A60161W01	Gear, Motor
77	2-E	03S94385F10	Screw, Pan Nylok (M2X4)
78		04B41345P05	Washer, Lock (M3.5)
79	1-C	75A80830W01	Rubber, Sleeve
81	3-A	43A70360W01	Steel, Ball
85		03S40014G66	Screw, W/Washer (M2X3.5)
86	2-E	03S40014G84	Screw, W/Washer (M2X6.5)
87	3-E	41A11040Y01	Spring, Sled-HOE
88	3-E	03S72235F81	Screw, Pan (M1.4X2)
89	2-E	41A11099Y01	Spring, Nut (A)
90	2-E	44A11101Y01	Spring, Nut (B)
91	3-D	03S40014G75	Screw, W/Washer (M2X9)